

YOUNG ATLANTIC WALRUS.

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ZOOLOGICAL SOCIETY

CHARTERED IN 1895

OBJECTS OF THE SOCIETY

A PUBLIC ZOOLOGICAL PARK

THE PRESERVATION OF OUR NATIVE ANIMALS

THE PROMOTION OF ZOOLOGY

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AGNEW, ANDREW G.,
AGNEW, MRS. CORNELIUS R.,
AITKEN, JOHN W.,
*ALDEN, R. PERCY,
ALDRICH, MRS. JAMES HERMAN,
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ALEXANDER, DOUGLAS,
ALEXANDER, FRANK D.,
ALEXANDER, MRS. HELEN B.,
ALEXANDER, MRS. HENRY A.,
ALEXANDER, DR. WELCOME T.,
ALEXANDER, MRS. WILLIAM,
ALEXANDRE, J. HENRY,
ALLAND, MAURICE,
ALLEN, ETHAN,
ALLIEN, FREDERICK,
ALTSCHUL, C.,
AMEND, ROBERT F.,
AMORY, COPLEY,
AMS, CHARLES M.,
AMUNDSON, JOHN A.,
ANDERSON, P. CHAUNCEY,
ANDREINI, J. M.,
ANDROUS, GEORGE L.,
APPLETON, FRANCIS R.,
APPLETON, JAMES W.,
ARCHBOLD, MRS. J. F.,
AREND, F. J.,
ARMOUR, GEORGE A.,
ARMOUR, MRS. HERMAN O.,
*ARMSTRONG, CHARLES P.,
ARMSTRONG, DR. WILLIAM,

ARMSTRONG, JOHN H.,
ASTOR, JOHN JACOB,
AUCHINCLOSS, MRS. EDGAR S.,
AUCHINCLOSS, EDGAR S.,
AUCHINCLOSS, HUGH,
AUCHINCLOSS, JOHN W.,
AYCRIGG, B. ARTHUR,
BACHE, JULES S.,
BACON, GEORGE W.,
BAKER, STEPHEN,
BALDWIN, FREDERICK H.,
BALDWIN, JR., JARED G.,
BANGS, DR. L. BOLTON,
BANKS, THEODORE H.,
BARBEY, HENRY G.,
BARCLAY, JR., J. SEARLE,
BARCLAY, MRS. REGINALD,
BARLOW, PETER T.,
BARNARD, J. AUGUSTUS,
BARNES, MISS CHARLOTTE A.,
BARNES, EDWARD W.,
BARNES, JR., J. SANFORD,
BARNES, MRS. JOHN S.,
BARNEY, A. L.,
BARNEY, ASHBEL H.,
BARNEY, MRS. J. STEWART,
BARNEY, N. C.,
BARNUM, WILLIAM M.,
BARRON, GEORGE D.,
BARROW, MISS,
BARTON, WILLIS E.,
BATTERSON, JAMES G.,
BAUMANN, GUSTAV,
BAUR, H. O.,
BAXTER, JR., GEORGE S.,
BAYARD, LOUIS P.,
BAYLIES, EDMUND L.,
BAYLIES, MRS. NATHALIE E.,
BAYLIS, WILLIAM,
BEACH, RALPH H.,
BEACH, WALTER R.,
BEADLESTON, ALFRED N.,
BEAL, WILLIAM R.,
BECKER, CHRISTIAN,
BECKER, CONRAD,

*Deceased.

BECKER, PHILIP,
 BEHR, ROBERT,
 BELL, PARK E.,
 BEMENT, EDWARD,
 BENKARD, HARRY H.,
 BENKARD, MRS. HARRY H.,
 BENJAMIN, EUGENE S.,
 BENSON, MISS MARY,
 BENSON, R. LAWRENCE,
 BENSON, ROBERT,
 BENSON, MISS THYRZA,
 BENNETT, W. H.,
 BERGSTRESSER, CHARLES M.,
 BEROLZHEIMER, E.,
 BERNHEIMER, CHARLES L.,
 BERNHEIMER, SIMON E.,
 BERRY, SAMUEL,
 BERTRON, S. R.,
 BEYER, MAX J.,
 BICKMORE, PROF. ALBERT S.,
 BIER, MRS. SYLVAN,
 BILLINGS, C. K. G.,
 BILLINGS, FREDERICK,
 BIRCHALL, W. H.,
 BIRCKHEAD, HUGH,
 BIRD, EDWARD DIMON,
 BIRD, GEORGE,
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 BISHOP, OGDEN,
 BLAGDEN, MRS. GEORGE,
 BLAGDEN, GEORGE,
 BLAGDEN, MRS. JULIA G.,
 BLAIR, MRS. LEDYARD,
 BLAIR, D. C.,
 BLAIR, J. INSLEY,
 BLAKE, DR. JOSEPH A.,
 BLAKESLEE, T. J.,
 BLISS, ERNEST C.,
 BLODGETT, WILLIAM TILDON,
 BLOODGOOD, ROBERT F.,
 BLOOMINGDALE, JOSEPH B.,
 BLOSS, JAMES O.,
 BOETTGER, H. W.,
 BOGERT, EDWARD C.,
 *BOGERT, EDWARD LANGDON,
 BOISSEvain, G. L.,
 BOLTON, JOHN W.,
 BOLTON, JR., THOMAS,
 BOND, ALFRED H.,
 BONNER, G. T.,
 BONNER, MRS. PAUL R.,
 BORGSTEDT, JOHN G.,
 BORLAND, J. NELSON,
 BORLAND, WILLIAM G.,
 *BORNE, JOHN E.,
 BOSTWICK, ALBERT C.,
 BOTELER, ELIJAH S.,

BOWDOIN, TEMPLE,
 BOWDOIN, MRS. TEMPLE,
 BOWEN, CLARENCE WINTHROP,
 BOWERS, JOHN M.,
 BOWNE, FRANCIS D.,
 BRACKETT, GEORGE C.,
 BRADLEY, ALLAN B. A.,
 BRADY, MRS. J. R.,
 BRADY, NICHOLAS F.,
 BRAINERD, IRA H.,
 BRAND, OSCAR J.,
 BRANDRETH, COURTENAY,
 BRANSON, PAUL,
 BRAUN, FREDERICK,
 BREIDENBACH, CHARLES M.,
 BRENNER, AUGUST F.,
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 BRINCKERHOFF, ELBERT A.,
 BRISTOL, JOHN I. D.,
 BRISTOW, WILLIAM B.,
 BROCKE, RUDOLF,
 BRODMERKEL, CHARLES,
 BRONSON, DR. EDWARD BENNET,
 BRONSON, MAYHEW W.,
 BRONSON, EDGAR B.,
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 BROWNING, J. A.,
 BRUCKER, CARL,
 BRYANT, DR. JOSEPH D.,
 BRYCE, MRS. WILLIAM,
 BUCHANAN, WILLIAM,
 BUCKNER, THOMAS A.,
 BUDD, HENRY A.,
 BUECHNER, C. FRED,
 BULKLEY, EDWIN M.,
 BULKLEY, MRS. EDWIN M.,
 BULKLEY, L. DUNCAN,
 BULL, CHARLES LIVINGSTON,
 BULL, ROBERT MACLAY,
 BULL, WILLIAM L.,
 BUMPUS, DR. HERMON C.,
 BURCZACK-BALK, H. W.,
 BURDEN, JR., JAMES A.,

*Deceased.

- BURDEN, JR., MRS. JAMES A.,
 BURGESS, EDWARD G.,
 BURLEIGH, GEORGE W.,
 BURLEIGH, MRS. GEORGE W.,
 BURNHAM, MRS. DOUGLAS W.,
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 BUSH, JOHN S.,
 BUSK, FRED T.,
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 BUTLER, MISS VIRGINIA,
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 BUTTNER, GUSTAV,
 BUTTS, JR., DR. A. C.,
 CABOT, F. H.,
 CAESAR, HENRY A.,
 CAHEN, JULIUS P.,
 CALEF, AMOS H.,
 CALLENDER, MISS MARY R.,
 CALMAN, ALBERT,
 CALMAN, HENRY L.,
 CAMMANN, EDWARD C.,
 CAMMANN, HENRY LORILLARD,
 CAMMANN, HERMANN H.,
 CANFIELD, GEORGE FOLGER,
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 CANNON, JR., H. W.,
 CANNON, JAMES G.,
 CANROBERT, A. H.,
 CAREY, FREDERICK F.,
 CAREY, HENRY T.,
 CARHART, A. SIBLEY,
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 CARPENTER, PHILIP,
 CARRERE, JOHN M.,
 CARROLL, ROYAL PHELPS,
 CASE, HENRY P.,
 CASS, CHARLES ANDERSON,
 CASSARD, WILLIAM J.,
 CASWELL, JOHN H.,
 CATHCART, MISS JENNIE R.,
 CERERO, R. L.,
 CHABOT, THEODORE J.,
 CHAMBERS, FRANK R.,
 CHAMPOLLION, ANDRE,
 *CHAPIN, MRS. ALFRED,
 CHAPIN, MISS MARIA BOWEN,
 CHAPMAN, HENRY OTIS,
 CHAPMAN, JOHN JAY,
 CHAUNCEY, ELIHU,
 CHEESMAN, MRS.,
 CHENEY, GEORGE L.,
 CHESEBROUGH, ROBERT A.,
 CHICHESTER, CHARLES DARWIN,
 CHILDS, EVERSLEY,
 CHILDS, MRS. LEWIS P.,
 CHILDS, WILLIAM H.,
 CHISOLM, B. OGDEN,
 CHISOLM, MRS. B. OGDEN,
 CHOATE, JOSEPH H.,
 CHUBB, PERCY,
 CHURCH, CHARLES T.,
 CHURCH, JR., E. D.,
 CHURCH, FREDERIC E.,
 CHURCH, F. S.,
 CHURCH, THEODORE W.,
 CLAFLIN, JOHN,
 CLARK, JR., LOUIS C.,
 CLARK, D. CRAWFORD,
 CLARK, J. FRANCIS ALOYSIUS,
 CLARK, J. MITCHELL,
 CLARK, L. C.,
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 CLARK, W. A.,
 CLARK, WALTER G.,
 CLARK, WILLIAM N.,
 CLARKE, E. A. S.,
 CLARKE, THOMAS SHIELDS,
 CLAUSEN, GEORGE C.,
 CLEVELAND, CHARLES D.,
 CLYDE, WILLIAM P.,
 COCHRANE, A. W. S.,
 *COCHRANE, JOHN W.,
 COCKEROTT, MISS E. V.,
 COCKRAN, HON. W. BOURKE,
 CODMAN, MRS. OGDEN,
 COFFIN, WILLIAM EDWARD,
 COLBRON, PAUL TOWNSEND,
 COLBURN, ALBERT E.,
 COLBY, HOWARD A.,
 COLE, EDWARD F.,
 COLE, MRS. RUFUS,
 COLT, HARRIS D.,
 COLT, RICHARD C.,
 COLLIER, PRICE,
 COLLIER, MRS. R. J.,
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 COLLINS, DR. STACY BUDD,
 COLLINS, MISS GERTRUDE,
 CONSTOCK, MRS. H. G.,
 CONDON, THOMAS GERALD,
 CONTENT, HARRY,
 CONWAY, MRS. MAUD ALLIS,
 *COOGAN, JOHN J.,
 COOMBE, T. GORTON,
 COOPER, THEODORE,
 CORBIN, AUSTIN,
 CORLIES, HOWARD,
 CORNING, C. R.,
 CORWINE, WILLIAM R.,
 COSTAIN, EUGENE H.,
 COSTER, EDWARD LIVINGSTON,
 COWDIN, WINTHROP,
 COWLES, DAVID S.,
 COX, CHARLES F.,

*Deceased.

COX, JENNINGS S.,
 CRAM, MRS. KATHRINE G.,
 CRAVATH, MRS. PAUL D.,
 CRAWFORD, WILLIAM,
 CRAYEN, DR. GUSTAV A.,
 CROMWELL, FREDERIC,
 CROMWELL, JAMES W.,
 CROMWELL, LINCOLN,
 CROSS, W. REDMOND,
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 CROSS, MRS. C. VANDERBILT,
 CROSSLEY, G. REGINALD,
 CRUICKSHANK, JAMES,
 CUNNINGHAM, W. DEL.,
 CURIEL, H.,
 CUSHING, HARRY A.,
 CUTTER, RALPH L.,
 CUTTING, R. FULTON,
 CUTTING, W. BAYARD,
 CUTTING, MRS. W. BAYARD,
 CUYLER, MRS. C. C.,
 CUYLER, MISS ELEANOR DE G.,
 DAILEY, GRANVILLE F.,
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 DAMON, WILLIAM E.,
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 DANA, WILLIAM B.,
 DANNHEIMER, WILLIAM L.,
 DARDS, CHARLES A.,
 DAVENTORT, DR. CHARLES B.,
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 DAVIDGE, WILLIAM H.,
 DAVIES, FREDERICK M.,
 DAVIES, J. CLARENCE,
 DAVIES, JULIEN TAPPAN,
 DAVIES, MRS. WILLIAM GILBERT,
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 DAVIS, GHERARDI,
 DAVIS, HOWLAND,
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 DAVIS, MORGAN,
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 DAVISON, GEORGE HOWARD,
 DAY, ARTHUR M.,
 DAY, MRS. HENRY MILLS,
 DEAN, DR. BASHFORD,
 DE COPPET, HENRY,
 DEEVES, RICHARD,
 DE FOREST, ROBERT W.,
 DEFOREST, MISS CAROLINE,
 DEGENER, J. F.,
 DEGOICOURIA, A. V.,
 DE KLYN, B. F.,
 DELAFIELD, FREDERICK P.,
 DELAFIELD, MISS JULIA LIVINGSTON,
 DELANO, WARREN,
 DE LANOY, WILLIAM C.,
 DEMAREST, MRS. WARREN G.,
 DEMING, L. C.,

DE RHAM, CHARLES,
 DE RHAM, MRS. H. CASIMIR,
 DESPARD, WALTER D.,
 DEVEREUX, WALTER B.,
 DE VINNE, THEODORE LOW,
 DE WITT, WILLIAM G.,
 DEXTER, STANLEY W.,
 DEY, ANTHONY,
 DEYO, ROBERT E.,
 DICK, J. HENRY,
 DICKERSON, E. N.,
 DIEHL, GEORGE H.,
 DIENST, A. P.,
 DIKE, OSCAR D.,
 DIMOCK, GEORGE E.,
 DITTMAR, JR., JOHN,
 DIXON, THEODORE P.,
 DODD, MISS GERTRUDE,
 DODGE, D. STUART,
 DODGE, MISS ELIZABETH W.,
 DODGE, MISS GRACE H.,
 DOMMERICH, L. F.,
 DOREMUS, F. S.,
 DOUBLEDAY, F. N.,
 DOUGLAS, WILLIAM HARRIS,
 DOUGLAS, JAMES,
 DOUGLASS, ALFRED,
 DOWNEY, JOHN I.,
 DOWS, JR., MRS. DAVID,
 DOWS, TRACY,
 DRAKENFELD, B. FERDINAND,
 DRAPER, DR. WILLIAM K.,
 DRAYTON, J. COLEMAN,
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 DRUMMOND, I. WYMAN,
 DUANE, RICHARD BACHE,
 DU BOIS, DR. MATTHEW B.,
 DUEL, DR. ARTHUR B.,
 DUER, MRS. JOHN BEVERLEY,
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 DUNCAN, STUART,
 DUNCAN, W. BUTLER,
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 DUNHAM, DR. CARROLL,
 DUNHAM, EDWARD K.,
 DUNHAM, MRS. G. H.,
 DUNN, GANO S.,
 DURYEA, MRS. H. B.,
 DURYEA, HARRY H.,
 DURYEA, GEN. HIRAM,
 DUTCHER, WILLIAM,
 DWIGHT, MRS. EDMUND,
 DWIGHT, JOHN E.,
 EASTON, CHARLES P.,
 EBBING, A. H.,
 ECKSTEIN, GEORGE,
 EDGAR, D.,
 EDGAR, HERMAN L. R.,

EDGAR, NEWBOLD,
 EDGELL, GEORGE S.,
 EDMONDS, JOHN W.,
 EGER, THEODOR G.,
 EGERTON, M.,
 EGGEING, OTTO,
 EIDLITZ, ROBERT JAMES,
 EILERS, CARL,
 ELBERS, MRS. FRITZ,
 ELDRIDGE, FREDERICK L.,
 ELDRIDGE, WILLIAM T.,
 ELLIS, WILLIAM D.,
 ELLSWORTH, DUNCAN S.,
 ELLSWORTH, LINCOLN,
 EMANUEL, JR., J. H.,
 EMMET, C. TEMPLE,
 EMMET, MISS LYDIA F.,
 EMMET, ROBERT TEMPLE,
 ENDICOTT, ROBERT,
 ENO, JOHN CHESTER,
 ERBSLOH, R.,
 ERDMANN, MARTIN,
 ERXMEYER, H. F.,
 ETTLINGER, LOUIS,
 EUSTIS, JOHN E.,
 *EVANS, MRS. CADWALADER,
 EVANS, MRS. D. W.,
 EVANS, RICHARD,
 EVARTS, MISS MARY,
 EVARTS, A. W.,
 EVARTS, SHERMAN,
 FABBRI, ALESSANDRO,
 FABBRI, ERNESTO G.,
 FABBRI, MRS. ERNESTO G.,
 FAHNESTOCK, HARRIS C.,
 FAHNESTOCK, WILLIAM,
 FAIRBANKS, HENRY P.,
 FAIRCHILD, MRS. C. S.,
 FALK, GUSTAV,
 FALLS, MRS. DEWITT CLINTON,
 FARGO, JAMES C.,
 FARLIE, A.,
 FARNHAM, PAULING,
 FARRELLY, T. CHARLES,
 FARRINGTON, HARVEY,
 FAY, FRANCIS B.,
 FENNELL, GEORGE W.,
 FERGUSON, HARRY L.,
 FERGUSON, REV. HENRY,
 FERNSTROM, H.,
 FEUSS, CAPT. ANDREW W.,
 FIELD, MRS. WILLIAM H.,
 FIELD, WILLIAM B. OSGOOD,
 FIELD, MRS. WILLIAM B. OSGOOD,
 FIELDING, GEORGE T.,
 FINCKE, MRS. REGINALD,
 FISCHER, WILLIAM H.,

FISHER, L. G.,
 FISK, DANIEL M.,
 FLAGLER, HARRY HARKNESS,
 FLEISCH, SAMUEL,
 FLINT, JR., AUSTIN,
 FLOWER, FREDERICK S.,
 FOHR, FRANZ,
 FOLLETT, RICHARD E.,
 FOOT, JAMES D.,
 FORAN, GEORGE J.,
 FORD, MISS LESTA,
 FORDYCE, JOHN A.,
 FOSTER, EDWARD W.,
 FOSTER, GIRAUD,
 FOSTER, J. HEGEMAN,
 FOSTER, MACOMB G.,
 FOSTER, SCOTT,
 FOWLER, THOMAS POWELL,
 FRALEY, JOHN U.,
 FRASER, MISS J. K.,
 FRASER, ALEX. J.,
 FRASER, ALEX. V.,
 FRASER, MRS. GEORGE S.,
 FRASER, MISS S. GRACE,
 FRASER, WILLIAM C.,
 FREEMAN, MISS GERTRUDE,
 FREES, JOHN F.,
 FRENCH, DR. CECIL,
 FRENCH, DANIEL C.,
 FRENCH, MRS. JOHN,
 FRIED, SAMPSON,
 FRIES, DR. HAROLD H.,
 FRISSELL, A. S.,
 FULDA, DR. CLEMENS,
 FULLER, CHARLES D.,
 FULLER, MRS. EUGENE,
 FUNKE, EDMUND A.,
 FUTTERER, CHARLES F.,
 GALLATIN, ALBERT,
 GALLATIN, GOELET,
 GARRETT, JOHN W.,
 GAUNT, JAMES,
 GAUTIER, CHARLES E.,
 GAUTIER, DUDLEY G.,
 GAY, JOSEPH E.,
 GEISENHEIMER, THEODORE,
 GELBACH, DR. R. WILLIAM,
 GEER, MRS. WALTER,
 GERARD, MRS. JAMES W.,
 GERRISH, JOHN BROWN,
 GERRY, PETER G.,
 GERSTER, DR. ARPAD G.,
 GERSTLE, EDWARD G.,
 GIANINI, CHARLES A.,
 GILBERT, CLINTON,
 GILLESPIE, ROBERT McM.,
 GILSEY, JR., HENRY,

*Deceased.

GLAZIER, HENRY S.,
 GLYN, W. E.,
 GOADBY, W. H.,
 GODDARD, FREDERIC N.,
 GODFREY, Mrs. E. D.,
 GOETZ, CARL,
 GOLDSCHMIDT, S. A.,
 GOLDMAN, JULIUS,
 GOODHUE, CHARLES E.,
 GOODHUE, Mrs. S. C.,
 GOODRIDGE, Mrs. ETHEL M.,
 GOODWIN, A. C.,
 GOODWIN, Mrs. J. J.,
 GOTTHELF, CHARLES,
 GOTTHELF, HERMAN,
 GOTTHOLD, FREDERIC,
 GOULD, CHARLES A.,
 GOULD, CHARLES W.,
 GOULD, EDWIN,
 GRANT, R. S.,
 GRAVES, GEORGE COE,
 GREEFF, ERNEST F.,
 GREENOUGH, JOHN,
 GREENWOOD, J. WM.,
 GREENWOOD, ISAAC J.,
 GREER, CHARLES,
 GREER, WILLIAM A.,
 GRIFFIN, Mrs. WILLIAM P.,
 *GRIFFITH, DANIEL J.,
 GRIFFITH, Miss MARGARETTE E.,
 GRIFFITH, Miss SUSAN D.,
 GRINNELL, GEORGE BIRD,
 GRISCOM, JR., CLEMENT A.,
 GRISWOLD, GEO.,
 GRISWOLD, CHESTER,
 GROSS, FRANK,
 GUGGENHEIM, SIMON,
 GURNEE, WALTER S.,
 HAGE, JOHN D.,
 HAIGHT, CHARLES S.,
 HAINES, CHARLES D.,
 HALLOCK, CHARLES P.,
 HALL, ARTHUR H.,
 HALL, A. C.,
 HALLS, JR., WILLIAM,
 HALSTEAD, Miss L. P.,
 HAMERSLEY, Miss C. L.,
 HAMERSLEY, LOUIS GORDON,
 HAMILTON, Miss ADELAIDE,
 HAMILTON, Miss ELIZABETH STEWART,
 HAMILTON, Mrs. WM. PIERSON,
 HAMMOND, JAMES B.,
 HAMMOND, Mrs. JOHN HENRY,
 HAMMOND, OGDEN H.,
 HANCE, JOHN A.,
 HARBECK, CHARLES T.,
 HARD, ANSON W.,

HARD, Mrs. ANSON W.,
 HARDENBERGH, T. E.,
 HARMON, Mrs. CLIFFORD,
 HARPER, LATHROP C.,
 HARRISON, FRANCIS BURTON,
 HARTSHORNE, J. M.,
 HARVEY, ELI,
 HASSLACHER, JACOB,
 HASTINGS, Mrs. THOMAS,
 HATFIELD, THOMAS F.,
 HAVEMEYER, JR., F. C.,
 HAVEMEYER, JR., H. O.,
 HAVEMEYER, J. C.,
 HAVEMEYER, T. A.,
 HAVEN, JR., GEORGE G.,
 HAVEN, J. WOODWARD,
 HAVENS, ALBERT G.,
 HAWE, MATTHEW,
 HAYES, Mrs. R. TOMERS,
 HAYNES, WILLIAM DEFOREST,
 HECKER, DR. ANTON J.,
 HEDGES, JOB E.,
 HEIMAN, ABRAHAM,
 HEIMAN, E.,
 HEIMAN, Mrs. SOPHIE,
 HEINTZ, JOHN C.,
 HEITEMEYER, CLEMENS,
 HENCKEN, HANCKE,
 HENDRICKS, FRANCIS,
 HENGSTLER, LOUIS,
 HENNING, EMIL F.,
 HERMANN, FERDINAND,
 HERRMAN, Mrs. ESTHER,
 HERTER, DR. CHRISTIAN A.,
 HESS, SELMAR,
 HEUMANN, MICHAEL,
 HEWITT, Mrs. ABRAM S.,
 HEWITT, HERBERT H.,
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 HILL, ROBERT C.,
 HILL, E. B.,
 HILL, FRANK B.,
 HILLS, DR. ALFRED K.,
 HILYARD, GEORGE D.,
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 HIRSCH, CHARLES S.,
 HITCHCOCK, FRANK,
 HOCHSCHILD, BERTHOLD,
 HOE, RICHARD M.,
 HOE, Mrs. RICHARD M.,
 HOE, Mrs. ROBERT,
 HOFFMAN, Mrs. E. A.,
 HOGG, JAMES A.,
 HOLBROOK, Mrs. F. S.,
 HOLDEN, EDWIN R.,
 HOLLINS, HENRY B.,
 HOLLISTER, WM. H.,

*Deceased.

HOLT, HENRY,
 HOLTER, MRS. E. O.,
 HOOKER, DR. RANSOM S.,
 HOOLEY, EDWIN S.,
 *HOPE, M. G.,
 HOPPIN, MISS FRANCES,
 HOPPIN, HAMILTON L.,
 HOPPIN, JR., WILLIAM W.,
 HORNADAY, MRS. J. C.,
 HOSKIER, H. C.,
 HOTCHKIN, W. B.,
 HOWE, WIRT,
 HOWELL, GEORGE C.,
 HOWELL, T. A.,
 HOWLAND, HENRY E.,
 HOWLAND, MRS. HENRY E.,
 HOYT, COLGATE,
 HOYT, JOHN SHERMAN,
 HOYT, WALTER S.,
 HOYT, GOOLD,
 HOYT, MRS. JESSE,
 HUGHES, CHARLES E.,
 HUMPHREYS, MRS. EDWARD WALSH,
 HUNTINGTON, REV. W. R.,
 HUNTINGTON, MRS. A. M.,
 HUNTINGTON, MRS. R. P.,
 HUFFEL, J. CHRISTOPHER G.,
 HURLBUT, FRANK M.,
 HUSSEY, WILLIAM H.,
 HUSTED, MISS M. KATHARINE,
 HUSTED, JR., SEYMOUR L.,
 HUTCHINS, AUGUSTUS SCHELL,
 HUTCHINSON, CARY T.,
 HUTTER, KARL,
 HUYLER, C. D.,
 HUYLER, JOHN C.,
 HUYLER, FRANK DEK.,
 HYDE, AUGUSTUS L.,
 HYDE, B. T. BABBITT,
 HYDE, MRS. CLARENCE M.,
 HYDE, DR. FREDERICK E.,
 INCIES, GEORGE B.,
 JAMS, J. T.,
 IRONS, HENRY C.,
 IRVIN, MRS. RICHARD,
 ISELIN, MRS. WILLIAM E.,
 ISELIN, JR., ADRIAN,
 ISELIN, C. OLIVER,
 ISELIN, COLUMBUS O'DONNELL,
 ISELIN, MISS GEORGINE,
 ISELIN, JOHN H.,
 ISELIN, WILLIAM E.,
 ISELIN, WILLIAM O'DONNELL,
 ISHAM, CHARLES B.,
 *ISHAM, CHARLES H.,
 ISHAM, SAMUEL,
 JACKSON, DR. GEORGE THOMAS,

JACKSON, R. G.,
 JACKSON, SAMUEL MACAULEY,
 JACOB, LAWRENCE,
 JACOBI, DR. A.,
 JACOBUS, JOHN S.,
 JACQUELIN, HERBERT T. B.,
 *JACQUELIN, JOHN H.,
 JAMES, MRS. WALTER B.,
 JAMES, ARTHUR CURTISS,
 JAMES, DR. ROBERT C.,
 JANEWAY, DR. EDWARD G.,
 JENKINS, WILLIAM B.,
 JENKINS, MRS. HELEN H.,
 JENNINGS, FREDERICK B.,
 JENNINGS, PHILANDER R.,
 JENNINGS, WALTER,
 JESUP, RICHARD M.,
 JOHNES, WM. FOULKE,
 JOHNSON, F. COIT,
 JOHNSON, GUY B.,
 JOHNSTON, J. HERBERT,
 JOHNSTON, SAMUEL D.,
 JOHNSTON, WILLIAM J.,
 JOLINE, ADRIAN HOFFMAN,
 JONES, MISS BEATRIX,
 JONES, MRS. CADWALADER,
 JONES, H. BOLTON,
 JONES, DWIGHT A.,
 JONES, LEWIS Q.,
 JONES, TOWNSEND,
 JUDSON, H. I.,
 KAEGEBEHN, ALFRED,
 KAEGEBEHN, MISS BERTHA K.,
 KAHN, LOUIS,
 KAHN, OTTO H.,
 KAMENA, WILLIAM L.,
 KANE, MISS LOUISA LANGDON,
 KAUTZ-EULENBERG, MISS P. R.,
 KEECH, FRANK B.,
 KELLEY, AUSTIN P.,
 KELLOGG, MRS. CHARLES,
 KELLY, EUGENE,
 KEMP, ARTHUR T.,
 KENNEDY, EDWARD G.,
 KENT, EDWIN C.,
 KEPPEL, DAVID,
 KEPPEL, FREDERICK,
 KEUFFEL, W. G.,
 KEYSER, MRS. SAMUEL,
 KIDDER, JAMES HATHAWAY,
 KIMBALL, ALFRED R.,
 KING, MRS. J. HOWARD,
 KING, AUGUSTUS F.,
 KING, BEVERLY S.,
 KING, JAMES GORE,
 KING, MISS ETHEL,
 KING, MRS. LEROY,

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KINNEY, MORRIS,
 KITCHING, FRANK W.,
 KITREDGE, SAMUEL DANA,
 KITZ, JOSEPH,
 KLAU, MARC,
 KLEE, BENJAMIN,
 KNIGHT, CHARLES R.,
 KNOEDLER, ROLAND F.,
 KOILMAN, CHARLES,
 KOILSAAT, MISS EDITH M.,
 KOLB, GUSTAVE F.,
 KOLB, JR., GEORGE C.,
 KOLB, FREDERICK,
 KREMER, MRS. WM. N.,
 KRUNSCHIED, C. D.,
 KUGELMANN, CHARLES,
 KUNHARDT, HENRY R.,
 KUSER, JOHN L.,
 KUTTROFF, ADOLF,
 LACOMBE, HON. E. HENRY,
 LADENBURG, MRS. ADOLF S.,
 *LADEW, MRS. EDWARD R.,
 LAGAI, DR. GEORGE,
 LAING, EDGAR H.,
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 LAMBERT, DR. A. V. S.,
 LAMBERT, DR. SAMUEL W.,
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 LONDON, FRANCIS G.,
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 LANE, JAMES WARREN,
 LANGE, MISS CARMEN,
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 LANGELOTH, J.,
 LANGDON, JR., WOODBURY G.,
 LANGMANN, DR. GUSTAV,
 LATTING, CHARLES P.,
 LAUDAUER, I. N.,
 LAWRENCE, JOHN BURLING,
 LAWRENCE, NEWBOLD T.,
 LAWRENCE, TOWNSEND,
 LAWRENCE, WALTER BOWEN,
 LAWRENCE, W. V.,
 LEARNED, WALTER,
 LEDOUX, DR. ALBERT R.,
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 LEE, PROF. FREDERIC S.,
 LEE, J. BOWERS,
 LEE, WILLIAM H. L.,
 LEDLIE, GEORGE,
 LEDYARD, EDGAR MADISON,
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 LEWIS, FREDERIC ELLIOTT,
 LESHER, A. L.,
 LETKEMANN, H. V.,
 LEVY, EMANUEL,
 LEWIS, MRS. AUGUST,
 LEWIS, PERCY PYNE,
 LEWIS, WADSWORTH RUSSELL,
 LEWIS, DR. WILLIAM J.,
 LEWISOHN, ADOLPH,
 LINCOLN, LOWELL,
 LITCHFIELD, E. HUBERT,
 LITCHFIELD, EDWARD H.,
 LITTAUER, WILLIAM,
 LIVINGSTON, WILLIAM S.,
 LOBENSTINE, WILLIAM C.,
 LOCKWOOD, EMERSON,
 LORD, MRS. GEORGE DEFOREST,
 LOWELL, MISS CARLOTTA RUSSELL,
 LOWELL, JAMES B.,
 LOW, ETHELBERT IDE,
 LUCHSINGER, JACQUES,
 LUDEKE, HENRY A.,
 LUDLOW, REAR-ADMIRAL NICOLL,
 LUEDER, A.,
 LUSK, PROF. GRAHAM,
 LUTTGEN, WALTHER,
 LUTYE, EDWARD N.,
 LYMAN, FRANK,
 LYON, EMORY L.,
 McALPIN, MRS. CHARLES W.,
 McALPIN, GEORGE L.,
 McCAGG, LOUIS B.,
 McCULLOCH, J. S.,
 McKIM, JOHN A.,
 McKIM, LEROY,
 McKINNEY, GLENN FORD,
 McLANE, THOS. L.,
 McLEAN, JAMES,
 McLEAN, MARSHALL,
 McMURTRY, G.,
 McVICKAR, EDWARD,
 McWILLIAMS, DANIEL W.,
 MACFARLANE, WALLACE,
 MACVEAGH, CHARLES S.,
 MACY, GEORGE H.,
 MAERLENDER, EDWARD H.,
 MAGEE, JOHN,
 MAGER, F. ROBERT,
 MAHONY, MISS HELEN F.,
 MAIRS, GEORGE H.,
 MALI, PIERRE,
 MANN, WILLIAM D'ALTON,
 MAPES, JR., DANIEL,
 MAPES, ERNEST S.,
 MARBURY, MISS ELIZABETH,
 MARKOE, DR. J. W.,
 MARLING, ALFRED E.,
 MARSH, C. P.,
 MARSHALL, CHARLES H.,
 MARSTON, EDWIN S.,
 MARTIN, JOHN S.,

*Deceased.

MARTIN, WILLIAM R. H.,
 MARTIN, JR., BRADLEY,
 MARTIN, HOWARD T.,
 MARTINEZ, MIGUEL R.,
 MASON, WILLIAM,
 MASTERS, MISS,
 MATHEWS, THOMAS,
 MAXWELL, ROBERT,
 MAYER, JESSE,
 MAYNARD, MRS. WALTER,
 MEHL, HENRY,
 MEISSNER, CARL A.,
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 MERKEL, AUGUST,
 MERRITT, HENRY C.,
 METCALFE, CAPTAIN HENRY,
 MEYER, CHARLES,
 MEYER, WILLIAM,
 MEYER, MISS HELOISE,
 MEYROWITZ, EMIL B.,
 MIDDLEBROOK, FREDERICK,
 DEMILHAU, LOUIS JOHN,
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 MILBURN, JOHN G.,
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 *MILLS, D. O.,
 MILMINE, C. E.,
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 MITCHELL, A. M. P.,
 MITCHELL, WILLIAM,
 MOFFAT, GEORGE BARCLAY,
 MONTANT, ALPHONSE,
 MONTGOMERY, RICHARD M.,
 MOORE, CASIMIR DE R.,
 MOORE, JR., CHARLES ARTHUR,
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 MORAWETZ, VICTOR,
 MORGAN, MISS ANNE T.,
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 MORGAN, MRS. JUNIUS S.,
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 MORGAN, WM. FELLOWES,
 MORRIS, DAVE H.,
 *MORRIS, FORDHAM,
 MORRIS, JOHN JACOB,
 MORRIS, DR. LEWIS RUTHERFORD,

MORRO, EDWARD,
 MORTIMER, RICHARD,
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 MOTT, JOHN BOWEN,
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 MUELLER, CHARLES F.,
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 MYERS, WILLIAM S.,
 NAEGELI, ROBERT,
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 NICHOLS, JOHN W. T.,
 NILES, ROBERT L.,
 NOBLE, ALFRED,
 NORRIE, A. LANFEAR,
 NORTH, GEORGE B.,
 NORTON, GEORGE F.,
 NOYES, MRS. HENRY D.,
 OBERMAYER, CHARLES J.,
 OFFERMAN, JOHN,
 OGDEN, CHARLES W.,
 OHMEIS, P. M.,
 OHMEIS, JOHN,
 OLCOTT, DUDLEY, 2ND,
 OLIN, MRS. STEPHEN H.,
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 OLYPHANT, ROBERT M.,
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 PACKARD, MRS. E. W.,
 PAGANELLI, RAPHAEL,
 PAGANELLI, T. RICHARD,
 PAGE, WM. H.,
 PAINTER, DR. H. MCM.,
 PALMER, S. S.,
 PALMER, DR. T. S.,
 PARKER, WINTHIOP,
 PARPART, WILLIAM E.,

*Deceased.

PARSONS, EDWIN,
 PARSONS, MRS. EDWIN,
 PARSONS, MISS GERTRUDE,
 PARSONS, H. DE B.,
 PARSONS, JOHN E.,
 PARSONS, MISS MARY,
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 PATERSON, R. W.,
 PAUL, JOHN J.,
 PAUL, W. A. O.,
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 PELL, STEPHEN H. P.,
 PENDLETON, FRANCIS KEY,
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 PENFOLD, WILLIAM HALL,
 PERCIVAL, L. A. D.,
 PERKINS, ROBERT P.,
 PERRY, WM. A.,
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 PETERS, CHARLES G.,
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 PETERS, WILLIAM RICHMOND,
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 PLAUT, ALBERT,
 PLYMPTON, GILBERT M.,
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 POPE, G. D.,
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 PRINCE, PROF. J. DYNELEY,
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 PUTNAM, J. BISHOP,
 PUTNAM, WILLIAM A.,
 PYLE, JAMES TOLMAN,
 PYNE, MRS. M. TAYLOR,
 PYNE, PERCY R., 2ND,
 QUINTARD, DR. EDWARD,
 RADFORD, HARRY V.,
 RANDALL, FRANK E.,
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 RANDOLPH, WILLIAM W.,
 RANFT, RICHARD,
 RAPALLO, EDWARD S.,
 RASCOVAR, JAMES,
 RATHBORNE, RICHARD C.,
 RAUCH, WILLIAM,
 READ, WILLIAM A.,
 *REDMOND, HENRY S.,
 REDMOND, MISS EMILY,
 REED, CHARLES,
 REID, JOHN,
 REIMER, OTTO EUGENE,
 REINCKE, E. A.,
 REINHARDT, GEORGE N.,
 REMSEN, CHARLES,
 REYNOLDS, E. B.,
 REYNOLDS, JAMES BRONSON,
 RHETT, MISS FLORENCE,
 RHINELANDER, CHARLES E.,
 RHINELANDER, FREDERIC W.,
 RICE, MRS. WILLIAM B.,
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 RICHARD, EDWIN A.,
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 RICHMOND, WATTS L.,
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 RIGGS, GEORGE C.,
 RIKER, SAMUEL,
 RIPLEY, H. DILLON,
 RIPLEY, JULIAN A.,
 RIPLEY, LOUIS A.,
 RIVES, GEORGE L.,
 ROBBINS, CHANDLER,
 ROBBINS, MRS. HELEN C.,
 ROBERTS, MISS M. M.,
 ROBERTS, G. THEODORE,

*Deceased.

ROBERTSON, ALBERT,
 ROBERTSON, MRS. FANNY P.,
 ROBERTSON, R. H.,
 ROBINSON, EDWARD,
 ROBINSON, ELI K.,
 ROBINSON, G. H.,
 ROBINSON, HENRY A.,
 ROBISON, WILLIAM,
 ROCKWOOD, WILLIAM H.,
 ROE, CHARLES F.,
 ROE, FRANK O.,
 ROE, IRVING L.,
 ROELKER, ALFRED,
 ROGERS, E. L.,
 ROGERS, MRS. WILLIAM B.,
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 ROGERS, HUBERT E.,
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 ROOSEVELT, W. EMLEN,
 ROOT, ELIHU,
 ROSSITER, ARTHUR W.,
 ROSSITER, E. V. W.,
 ROTH, FREDERICK G. R.,
 ROTHWELL, JAMES E.,
 ROWLAND, THOMAS,
 RUNYON, CARMAN R.,
 RUNYON, E. W.,
 RUPPERT, JACOB,
 RUPPERT, MRS. JACOB,
 RUPERTI, JUSTUS,
 RUSSELL, ARCHIBALD D.,
 RUSSELL, DR. JOHN F.,
 RYAN, J. D.,
 RYLE, ARTHUR,
 RYLE, GRAHAM,
 SACKETT, MISS GERTRUDE T.,
 SAGE, JOHN H.,
 SAGE, MRS. RUSSELL,
 SAMPSON, CHARLES E.,
 SANDS, MISS ANNE A.,
 SATTERLEE, MRS. H. L.,
 SAUTER, FREDERICK,
 SENFF, MRS. CHARLES H.,
 SCHAEFER, ANDREAS F.,
 SCHAEFER, EDWARD C.,
 SCHAEFER, HENRY,
 SCHIAFF, HERMANN,
 SCHANCK, GEORGE E.,
 SHANG, FREDERICK,
 SCHAU, C. F.,
 SCHIEFER, CARL,
 SCHIEFFELIN, MRS. H. M.,
 SCHIEFFELIN, WILLIAM JAY,
 SCHIRMER, RUDOLPH E.,
 SCHMIDT, WM. H.,
 SCHMIDT, ADOLPH T.,
 SCHMIDT, F. LEOPOLD,
 SCHNABEL, R. A.,
 SCHNIEWIND, F.,

SCHOLLE, A. H.,
 SCHRAG, CHARLES A.,
 SCHREIBER, LOUIS,
 SCHREYVOGEL, CHARLES,
 SCHULTZE, CHARLES,
 SCHULTZE, FRED,
 SCHUYLER, MISS LOUISA LEE,
 SCHWARCZ, MAX M.,
 SCHWARZ, HENRY F.,
 SCHWERIN, CLARENCE M.,
 SCOTT, HON. FRANCIS M.,
 SCOTT, FRANK H.,
 SCOTT, WILLIAM,
 SCOTT, STUART,
 SCOVILLE, ROBERT,
 SCRIBNER, ARTHUR H.,
 SCRYMSE, JAMES A.,
 SEDGWICK, ROBERT,
 SEE, A. B.,
 SELIGMAN, ALFRED L.,
 SELIGMAN, JEFFERSON,
 SETON, ALFRED,
 SEXTON, LAWRENCE E.,
 SEYBEL, DANIEL E.,
 SHAPIRO, D.,
 SHARDLOW, MRS. JOSEPH,
 SHAW, CHARLES HERBERT,
 SHAW, JAMES G.,
 SHEETS, DR. E. A.,
 SHEFFIELD, JAMES R.,
 SHIELDON, GEORGE R.,
 SHIELDON, WILLIAM C.,
 SHOEMAKER, HENRY W.,
 SHOPE, JULIAN B.,
 SHURTLEFF, ROSWELL MORSE,
 SIBLEY, MRS. H. W.,
 SICKLES, MAJ.-GEN. DANIEL E.,
 SIEGEL, JACOB,
 SILLECK, JR., HENRY G.,
 SILLECK, JR., MRS. HENRY G.,
 SILLIMAN, HARPER,
 SIMPSON, JOHN W.,
 SINGER, ARTHUR J.,
 SKEEL, DR. FRANK D.,
 SKIDMORE, WILLIAM L.,
 SLADE, FRANCIS LOUIS,
 SLAUGHTER, R. B.,
 SMILEY, DANIEL,
 SMILLIE, JAMES C.,
 SMILLIE, CHARLES F.,
 SMITH, DR. A. ALEXANDER,
 SMITH, AUGUSTINE J.,
 SMITH, ERSKINE M.,
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 SMITH, F. M.,
 SMITH, H. SANBORN,
 SMITH, NATHANIEL S.,
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SMITHERS, CHARLES,
 SMITHERS, F. S.,
 SNOW, E. G.,
 SOLTSMANN, E. G.,
 SORCHON, MRS. VICTOR,
 SPALDING, KEITH,
 SPARROW, EDWARD W.,
 SPEAR, JR., JAMES,
 SPEDDEN, FREDERIC O.,
 SPENCER, EDWARDS,
 SPENCER, LORILLARD,
 SPEYER, MRS. JAMES,
 SPITZNER, GEORGE W.,
 SPOFFORD, MRS. J. L.,
 SPRAGUE, MRS. FRANK,
 SPRING, MISS ANNA RIKER,
 SPURR, E. W.,
 SQUIBB, DR. EDWARD H.,
 STAFFORD, WILLIAM FREDERICK,
 STANDISH, MYLES,
 STANTON, JOHN R.,
 STARR, LOUIS MORRIS,
 STARKE, ALBERT G.,
 STEARNS, LOUIS,
 STEBBINS, JAMES H.,
 STECKER, ADAM A.,
 STEERS, HENRY,
 STEELE, MRS. CHARLES,
 STEEVES, JOHN F.,
 STEINBECK, EDWARD,
 STEINMETZ, JOHN A.,
 STEPHENS, OLIN J.,
 STERN, ISAAC,
 STEVENS, ALEXANDER H.,
 STEVENS, FREDERIC W.,
 STEVENS, RICHARD,
 STEVENS, THEODOSIUS F.,
 STEVENSON, PAUL EVE,
 STEWART, JAMES,
 STEWART, MRS. PERCY H.,
 STEWART, WILLIAM R.,
 STILLMAN, JAMES A.,
 STIMSON, DR. DANIEL M.,
 STOKES, H. B.,
 STORY, MRS. M. H.,
 STOUT, JOSEPH S.,
 STOW, GEORGE G.,
 STRANGE, A. B.,
 STRAUSS, FREDERICK,
 STREAT, JAMES,
 STREETER, JR., D. D.,
 STRONG, THERON G.,
 STURGES, MISS,
 STURGES, HENRY C.,
 STILLMAN, C. C.,
 STILLMAN, MRS. C. C.,
 STROOCK, LOUIS S.,

SULLIVAN, MRS. JAMES,
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 SWENSON, S. A.,
 TABER, MISS MARY,
 TAFT, HENRY W.,
 TALCOTT, JAMES,
 TALMAGE, MRS. E. T. H.,
 TAMS, MRS. J. FREDERICK,
 TATHAM, CHARLES,
 TATUM, A. H.,
 TAYLOR, DWIGHT W.,
 TAYLOR, GEORGE,
 TAYLOR, MRS. HENRY OSBORN,
 TAYLOR, HENRY R.,
 TAYLOR, HERBERT C.,
 TAYLOR, JAMES B.,
 TAYLOR, KNOX,
 TAYLOR, LLOYD,
 TAYLOR, MOSES,
 TAYLOR, STEVENSON,
 TENNEY, C. H.,
 TERRY, JOHN T.,
 THACHER, MRS. GEORGE W.,
 THACHER, THOMAS,
 THAW, BENJAMIN,
 THAYER, MRS. EZRA RIPLEY,
 THAYER, HARRY BATES,
 THOMAS, DR. ALLEN M.,
 *THOMAS, SETH E.,
 THOMAS, MRS. WASHINGTON,
 THORNE, JONATHAN,
 THORNE, MRS. JONATHAN,
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 THORNE, MRS. W. V. S.,
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 THORP, W. EDWIN,
 TIFFANY, LOUIS C.,
 TILFORD, HENRY M.,
 TILT, BENJAMIN B.,
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 TIMKEN, J. HENRY,
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 TOD, J. KENNEDY,
 TODD, H. H.,
 TOLER, MRS. VIRGINIA W.,
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 TOUSEY, WILLIAM,
 TOWNSEND, MISS AMY C.,
 TOWNSEND, ISAAC,
 TOWNSEND, EDWIN S.,
 TOWNSEND, J. HENRY,
 TOWNSHEND, JOHN,
 TOWS, COE DOWNING,
 TRACY, THOMAS,
 TRAVELLI, MRS. CHARLES I.,
 TROSTEL, JR., FERDINAND,

*Deceased.

TROWBRIDGE, MISS LOUISE A.,
 TROWBRIDGE, FREDERICK K.,
 *TRUAX, HON. CHARLES H.,
 TUCKERMAN, ALFRED,
 TUCKERMANN, PAUL,
 TURNBULL, MRS. RAMSAY,
 TURNURE, MRS. ARTHUR,
 TURNURE, GEORGE E.,
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 TWEDDELL, WILLIAM H.,
 TWINING, E. S.,
 UNDERWOOD, WILLIAM LYMAN,
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 VALENTINE, DR. WILLIAM A.,
 VAN BEUREN, JR., FREDERICK T.,
 VAN BEUREN, M. M.,
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 VAN INGEN, MRS. EDWARD,
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 VANDERPOEL, MRS. JOHN A.,
 VAN DER SAIJSSEN, DR. G. J.,
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 *VAN NEST, MRS. ALEXANDER T.,
 VAN NEST, G. WILLETT,
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 VAN SINDEREN, HOWARD,
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 VECCHIO, LOUIS,
 VICTOR, A.,
 VICTOR, THOMAS F.,
 VINCENT, FRANK,
 VOGEL, HERMAN,
 VON DREELE, WILLIAM H.,
 VONDERMUHL, ALFRED,
 VON LINGERKE, JUSTUS,
 WADDINGTON, GEORGE,
 WAGNER, H. WILLIAM C.,
 WAGSTAFF, C. DU BOIS,
 WAINWRIGHT, J. HOWARD,
 WALCOTT, FREDERIC C.,
 WALES, EDWARD H.,
 WALLER, JR., ROBERT,
 WALSH, SAMUEL A.,
 WALTER, EDGAR,
 WALTER, F. E.,
 WALTER, MARTIN,
 WANNINGER, CHARLES,
 WARBURG, PAUL M.,
 WARD, ARTEMAS,
 WARD, MRS. GEORGE CABOT,
 WARD, HENRY C.,
 *WARD, J. Q. A.,
 WARDNER, HENRY STEELE,
 WARDWELL, ALLEN,
 WARDWELL, WILLIAM T.,
 WARREN, MRS. J. HOBART,
 WARREN, LLOYD,

WATERBURY, MISS,
 WATERBURY, JOHN I.,
 WATSON, CHARLES F.,
 WATSON, REV. J. HENRY,
 WEATHERBEE, EDWIN H.,
 WEBB, F. EGERTON,
 WEBB, MRS. WM. SEWARD,
 WEBER, DR. LEONARD,
 WEBER, CHARLES,
 WEEKS, JAMES,
 WEIR, MRS. C. GOUVENEUR,
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 WENDELL, EVERT JANSEN,
 WENDELL, MRS. JACOB,
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 WERTHEIM, H. P.,
 WESTOVER, M. F.,
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 WHEELER, WALTER S.,
 WHEELOCK, MRS. G. G.,
 WHITE, A. M.,
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 WHITE, HAROLD T.,
 WHITE, HORACE,
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 WHITE, LEONARD D.,
 WHITE, WILLIAM W.,
 WHITEHOUSE, J. HENRY,
 WHITEHOUSE, WILLIAM F.,
 WHITING, DR. CHARLES A.,
 WHITING, MISS GERTRUDE,
 WHITING, GILES,
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 WHITMAN, JR., WILLIAM,
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 WHITRIDGE, F. W.,
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 WILKINS, F. H.,
 WILLETS, JOHN T.,
 WILLIAMS, MRS. G. G.,
 WILLIAMS, MRS. PRACY H.,
 WILLIAMS, R. H.,
 WILLIAMS, JR., RICHARD H.,
 WILLIAMS, THOMAS,
 WILLIAMS, WALDRON,
 WILLOUGHBY, MISS MARY CAREW,
 WILLS, CHARLES T.,
 WILSON, PROF. EDMUND B.,
 WILSON, GEORGE T.,
 WINANT, FREDERICK,
 WINCKELBACH, L. O.,
 WINTHIROP, EGERTON L.,
 WINTHIROP, JR., EGERTON L.,
 WINTHIROP, JR., MRS. EGERTON L.,
 WINTHIROP, ROBERT DUDLEY,

WISNER, CHARLES,
 WITHERBEE, FRANK S.,
 WITTHAUS, DR. RUDOLPH A.,
 WOLF, ARTHUR D.,
 WOLFF, EMIL,
 WOOD, ARNOLD,
 WOOD, GILBERT CONGDON,
 WOOD, J. WALTER,
 WOOD, WILLIAM CONGDON,
 WOODCOCK, EDWIN,
 WOODHOUSE, J. S.,
 WOODRUFF, ALBERT C.,
 WOODWARD, ROBERT B.,
 *WOODWARD, JAMES T.,

WORCESTER, WILFRED J.,
 WORRALL, P. B.,
 WRIGHT, J. DUNBAR,
 WRIGHT, MRS. J. HOOD,
 WRIGHT, JOHN HOWARD,
 WRIGHT, MRS. MABEL OSGOOD,
 WYCKOFF, DR. PETER BROWN,
 YORKWITZ, ALBERT,
 YOUNG, A. MURRAY,
 YOUNG, GEORGE W.,
 YOUNG, JOHN ALVIN,
 ZABRISKIE, ANDREW C.,
 ZINSSER, AUGUST,

*Deceased.

Corresponding Members.

GILFEDDER, T. P.,

JOHNSTON, SIR HARRY H.

Summary of Membership

Benefactors	7
Founders in Perpetuity.....	11
Founders	21
Associate Founders	10
Patrons	39
Life Members	227
Annual Members	1,469
Honorary and Corresponding Members.....	12
	<hr/>
	1,796

Qualifications for Regular Membership

Annual Members	\$ 10	Associate Founders ...	\$ 2,500
Life Members	200	Founders	5,000
Patrons	1,000	Founder in Perpetuity.	10,000
Benefactor	\$25,000		

Form of Bequest

I do hereby give and bequeath to the "NEW YORK ZOOLOGICAL SOCIETY," of the City of New York,



NEW ADMINISTRATION BUILDING.
Completed and opened in 1910.

REPORT OF
THE EXECUTIVE COMMITTEE
TO THE BOARD OF MANAGERS

THE most notable event in the year just closed is the completion of the first quarter million of the Endowment Fund. In the report for the year 1909 the necessity for the establishment of such a fund was set forth by the Committee. The New York Zoological Society last year stood in a position somewhat unique among the quasi-public institutions of this City, owing to the fact that although it has raised in annual contributions and outright gifts to the Park over one-half million dollars, it had no Endowment. A large portion of this half million was expended for buildings, paths, fences and other construction work in the Zoological Park, in spite of the fact that the cost of work of this character in the other institutions had been defrayed by the City. For this reason, money which in other institutions would have been placed in an Endowment Fund, has been actually spent by the Society in order to establish the Park in public favor; and the result has certainly justified the wisdom of this course of action.

The Society was at a further disadvantage owing to the fact that while the collections of animals were purchased by and belong to the Society, their value is highly ephemeral, and tends to decrease rather than to increase. A collection of pictures or other museum material is constantly growing in value with the increasing rarity of the specimens, but animals are not immortal and require constant replacement. The Park having been constructed and fully stocked with one of the best collections of animals in the world, the Executive Committee felt that the next step was to secure an Endowment Fund of at least one million dollars, for the following general purposes:

First.—Permanence of the Society, and thus of the Park and Aquarium.

Second.—Scientific Exploration and Publication, such as is conducted by other similar societies in other parts of the world.

Third.—Protection of Animal Life, as the Society's part in the general conservation movement which is going on not only in the United States, but in all parts of the world.

As a nucleus of a Million Dollar Fund, the Executive Committee decided to raise, by immediate subscription, the sum of \$250,000 before the first of January, 1911, and with the special assistance of some of the friends of the Society, this amount was secured. The income derived from this sum will do little more than enable the Society to comfortably carry on its work on the present basis, without any enlargement or extension; but the Committee hopes that this permanent fund will rapidly increase through special subscriptions and more particularly through bequests. The income from a million dollars would enable the Society to greatly extend and perfect its work.

The Executive Committee takes this opportunity to extend the thanks of the Society for the timely generosity of the subscribers to the Fund, who are as follows:

Samuel Thorne	\$25,000.00
Jacob H. Schiff.....	25,000.00
George F. Baker	25,000.00
Cleveland H. Dodge.....	25,000.00
J. Pierpont Morgan.....	20,000.00
Est. Phoebe Anna Thorne.....	10,000.00
Ogden Mills	10,000.00
Levi P. Morton.....	10,000.00
Percy R. Pyne	10,000.00
Edward S. Harkness.....	5,000.00
Andrew Carnegie	5,000.00
Miss Emily Trevor	5,000.00
A Friend	5,000.00
Samuel P. Avery.....	5,000.00
Frank K. Sturgis.....	5,000.00
John L. Cadwalader.....	5,000.00
George C. Clark.....	5,000.00
George W. Perkins	5,000.00
Robert S. Brewster	5,000.00
Henry A. C. Taylor.....	5,000.00
John D. Archbold.....	5,000.00
Frederick G. Bourne	5,000.00
Charles F. Dieterich	5,000.00
George J. Gould.....	5,000.00
Hugh J. Chisholm	5,000.00
Mrs. F. F. Thompson.....	5,000.00
Lispenard Stewart	2,500.00
Miss Serena Rhinelanders.....	2,500.00

<i>Brought forward</i>	\$250,000.00
Grant B. Schley.....	2,500.00
F. Augustus Schermerhorn	1,000.00
Walter B. James.....	1,000.00
Miss Helen Miller Gould.....	1,000.00
Miscellaneous, including General Fund ..	1,262.80

Total, January 1, 1911... .. \$256,762.80

Bequest due from the Estate of Mrs. Helen C. Inslee, conditioned upon two lives, \$5,000.

The original Charter of the Society provided that the Society could not hold real and personal property in a greater amount than was sufficient to provide an annual income of \$50,000. On May 6, 1910, your Committee secured an amendment to the Charter removing this restriction, and a copy of this new amended Charter is printed on page 142 of this report.

The Endowment Fund has been invested by the Treasurer and the Finance Committee in securities that will net the Society about 4.57 per cent. The details of its investment appear more particularly in the Treasurer's statements.

The membership of the Society on January 1, 1911, showing an increase over 1910 is:

Benefactors	7
Founders in Perpetuity.....	11
Founders	21
Associate Founders	10
Patrons	39
Life Members	227
Annual Members	1,469
Honorary and Corresponding Members.....	12

Total 1910 1,796
Total 1909 1,764

FINANCES

Animal Fund.—The receipts for the Animal Fund have been as follows:

Received from sales of animals.....	\$2,482.65
Received from Park Privileges.....	24,121.48
Balance from the year 1909.....	19,861.25

Total receipts \$46,465.38



BAIRD COURT AND ROCKEFELLER FOUNTAIN.

View from the Concourse looking south.

Structures, reading from left, are, Administration Building, Primate House, Lion House and large Bird-House. The Italian Garden is directly between the buildings on the extreme right and left of the picture.

Animal Fund.—Cont.

Receipts brought forward..... \$46,465.38

Expended for animals during 1910—

Birds	\$4,736.57
Mammals	6,424.90
Reptiles	1,578.58
Insects	51.47

\$12,791.52

Express and other charges..... 1,261.39

Traveling and other expenses... 246.24

14,299.15

Balance \$32,166.23

The Department of Privileges, under Chief Clerk Mitchell, deserves a word of special commendation. This Department of the Park has proved a very substantial source of income, and the Committee desires to make special acknowledgment of the manner in which it has been administered.

Income Account.—The income received from Life Members during the year 1910, amounted to..... \$3,200.00
 From Annual Members..... 14,010.00
 From Sustaining Members..... 3,140.00

Total 20,350.00

The total amount expended and chargeable against this fund amounted to \$24,556.85, making a deficit of \$4,206.85, which reduced the cash balance on hand at the end of the year to the figure of \$5,498.40. The income received from the Endowment Fund, which will accrue during the year 1911, will provide sufficient additional funds to wipe out any deficit in this fund for 1911. With this additional resource the necessity of placing the fees for Life Memberships in this fund has ceased, and on and after January 1, 1911, fees received from Life Memberships will be credited to the Endowment Fund.

The Sustaining Memberships have three years more to run, and it is hoped by that time that the income from the Endowment Fund will be sufficiently large to do away with the necessity of such special subscriptions.

From now on your Committee expects the Income Account to be sufficient, with strict economy, to carry on the general work of the Society, but until a much larger Endowment Fund is pro-

vided, no great extension of the activities of the Society can be charged against this fund.

Mr. John D. Rockefeller donated during the year the sum of \$10,000, \$1,000 of which, together with accrued interest, is to be annually credited to this fund.

Ground Improvement Fund.—On January 1, 1910, there was a balance of \$28,351.14 to the credit of the Ground Improvement Fund, and during August, 1910, \$84,500 were provided by the City, for the following specific purposes:

Erection of Bear Dens; Removal of Moose	
House; Yak Shelter and Yards.....	\$11,000.00
Zebra House	36,000.00
Eagle and Vulture Aviary	20,000.00
New Walks, Fences, &c.....	17,500.00

On December 31, 1910, there was a balance of \$56,367.71 to the credit of this fund.

Stokes' Bird Fund.—On January 1, 1910, there was a cash balance of \$5,203.89 to the credit of this fund, and during the year interest accumulated in the amount of \$206.47. There have been no expenditures, and \$5,056.46 was invested in five Illinois Central Railway, four per cent. gold bonds, leaving a cash balance of \$353.50 on December 31, 1910.

Maintenance of the Park.—By the most strenuous economy, the amount provided by the City for the maintenance of the Park for 1910, viz., \$167,632, proved sufficient to carry the Park through the year, in spite of special expenditures in an effort to keep the Park exceptionally clean and in providing additional attendants.

A substantial increase for 1911 was requested in order to meet the charges for additional attendants and increased cost of living, as well as to enable the Society to recompense its faithful employees on a more liberal basis. A notice, however, was received from the Board of Estimate and Apportionment, stating that instead of an increase, we would have to make provision for a reduction of ten per cent. A vigorous protest was made by the officers of the Society, who showed clearly that a reduction in our present inadequate maintenance was impossible owing to the fact that the animals required food and attendants and that no reduction in the scale of wages was possible, our men being greatly underpaid in comparison with City employees. The

Society's officers received a courteous hearing from the members of the Special Committee of the Board of Estimate and Apportionment, who had this matter under consideration, and instead of a decrease, the Society was allowed a \$7,000 addition over the preceding year, giving us for 1911, the amount of \$174,632.

Maintenance of the Aquarium.—The Maintenance of the Aquarium for the year 1910, viz., \$46,000, proved sufficient for the administration of that institution, without a deficit. An increase of \$2,000 has been secured for the year 1911, making a total allowance of \$48,000, which, in view of the strict economies practiced by the city authorities in connection with other City institutions, proves the high esteem in which this institution is held.

During the year the original law, which stated that the City could provide maintenance for the Aquarium only up to \$50,000 per annum, was amended on May 6, 1910, so that the Board of Estimate and Apportionment can now provide maintenance for the Aquarium in its discretion. A copy of the amendment appears on page 143.

The increase in the maintenance of \$2,000 will enable us to retain the services of Dr. Raymond C. Osburn as Assistant Director.

Aquarium Improvement Fund.—On January 1, 1911, there was a balance of \$344.44 in the old Aquarium Improvement Fund. The sum of \$5,000 had been received from the City for alterations to the Aquarium roof. These alterations have been completed and a small balance of \$23 remains in this fund.

The Auditing Committee during the past year made a special audit of all the accounts of the Society, including the Privilege Accounts, and reported to your Committee that they found all the accounts of the Society in excellent condition.

Detailed statements of the above accounts are set forth in the Treasurer's statements on page 50, followed by the report of the Auditing Committee.

Important Gifts to the Park.—The most important gifts received during the year were, of course, the subscriptions to the Endowment Fund, but in addition to that the Society was fortunate in securing, from Mr. Paul J. Rainey, a gift of six musk-ox calves, two polar bears, two walruses and one blue fox; and through Mr. Charles Sumner Bird, a lioness that had been lassoed in British East Africa by Colonel C. J. Jones and his cow-boys.



THE CONCOURSE, LOOKING NORTH.

ANIMAL COLLECTIONS

During the year the animal collections made a notable increase in extent and zoological value over their condition at the beginning of the year. The principal effort of the Society has been directed toward strengthening the collections throughout, rather than in the obtaining of a few costly rarities. By reason of this, it is only fair to state that the collections as a whole are the strongest and the richest, zoologically, that they ever have been.

A noteworthy feature was the formation, under the direction of Curator Ditmars, of an economic collection of insects, and another of reptiles and rodents exhibited together. The former was installed and exhibited in the pavilion between the Ostrich and Small-Mammal Houses and attracted much attention throughout the months of mild weather that it was possible to maintain it at that point. The economic exhibit of reptiles and rodents was permanently installed along the southern side of the main hall of the Reptile House, and aside from greatly increasing the species on exhibition, both of reptiles and of rodents, the collection is calculated to serve the useful purpose of informing the public concerning the relations existing in nature between rodents and the reptiles that destroy them, and certain species of carnivores that especially prey upon reptiles.

Aside from the usual annual loss of small and short-lived animals, the deaths during the year were quite insignificant. The only losses worthy of note consisted of a male tiger, a kiang of mature years, and a Baker roan antelope.

The census of the mammals, birds and reptiles living in the Park on January 1, 1911, is as follows:

	Species	Specimens
Mammals	240	815
Birds	772	3,013
Reptiles	148	1,335
	<hr/> 1,160	<hr/> 5,163

These figures show an increase over 1909, of 44 species and 163 specimens.

With the balance on hand in the Animal Fund, the Society proposes to organize expeditions to secure some of the larger animals. Arrangements have been made with a firm in Nairobi, British East Africa, to capture for the Society, a pair of living

white rhinoceroses. Permits have been secured and the expedition will start early in 1911.

ROCKEFELLER FOUNTAIN

During the year the Rockefeller Fountain, presented to the Park by Mr. William Rockefeller, was removed from its original site to the circle in the Concourse, and the expense was defrayed by the donor.

NEW BUILDINGS AND INSTALLATIONS

In addition to several small buildings and an important central Public Comfort Station that were constructed during the year, the Administration Building was at last thrown open to the use of the members of the Society. It is located at the northeast corner of Baird Court, and can be closely approached by automobiles and carriages. Its use is restricted to the officers and members of the Society and their guests, and special accommodations have been provided for the comfort of ladies and children. Every effort has been made to render the use of this building convenient for members, and your Committee believes that it will serve as a meeting place for members.

The building contains the library of the Society and the splendid collection of heads and horns, which has now attained most notable proportions.

NATIONAL COLLECTION OF HEADS AND HORNS

This undertaking has already secured the interest of a large number of sportsmen and naturalists, and its importance and value is steadily growing. Already the Collection has become famous throughout the world, and its standing as a permanent feature in the Park is thoroughly assured.

During the late winter and early spring, the Director spent months of diligent labor in measuring, arranging, hanging and labelling the Heads and Horns Collection of 688 specimens. The Collection completely fills the two picture galleries in the Administration Building. The walls are so densely crowded with specimens it is plainly evident that a special building is needed to accommodate the Collection and provide for its growth. The general public is keenly desirous of viewing the Heads and Horns, and it is only fair that provisions should be made which will enable the Zoological Society to gratify this legitimate desire. A separate building for the National Collection should be provided at an early date.

The most important gifts to the Heads and Horns Collection were:

Indian buffalo; Burmese banting; Turkestan sheep; Karelin sheep; Livingstone suni; European red deer, from New Zealand; Astor markhor; sable antelope; Barren-Ground musk-ox; Newfoundland caribou and blesbok, all from H. Casimir deRham.

New Brunswick moose head, from Edwin C. Kent.

White-tailed deer head, from George Bird Grinnell.

Barasingha deer; Congo buffalo, from Frank Hart.

Bongo, from James L. Clark.

LIBRARY

The opening of the reading-room and stack-room, which form the library accommodations of the Administration Building, has painfully emphasized the fact that thus far the Zoological Society possesses a library which is little more than a nucleus. It is neither the intention nor the desire of your Committee to establish a library which will contain an immense number of books and pamphlets of value only to systematists. On the other hand, there is a strong demand for what may well be called a library of practical zoological knowledge, developed with especial reference to the actual needs of the public. It should include all works that deal with the living fauna of the earth, but particularly the vertebrates and insects, because those forms to-day are of the greatest importance to mankind. It is also desirable that the library should contain the illustrated zoological works that are calculated to be of practical assistance to artists, sculptors and sportsmen, as well as to working zoologists.

Funds to provide additional books are greatly needed as the Library Fund on the first of the year contained only \$1,776.49, an amount quite sufficient to provide even for the immediate requirements of the Society.

MEDICAL DEPARTMENT

The Medical Department has been especially fortunate during the past year in that it has not been called upon to deal with any serious epidemic among the mammal collections. The death rate continues to remain at the low mark of the past few years. The details of this department are clearly set forth in Dr. Blair's report.



PORTION OF THE WALK ON THE EAST SIDE OF THE CONCOURSE.

FORESTRY DEPARTMENT

The Forestry Department during the year did a large amount of work in protecting the trees and shrubs, as well as in new planting. The Chief Forester has had charge of the construction work during the year, which is more fully set forth in his report.

The general appearance of the Park depends largely on the zeal and thoroughness of this department. The result has been extremely satisfactory, not only to your Committee, but to visitors, and has frequently called forth favorable comment.

PUBLICATIONS

For the year 1910, the publications of the Society were:

The Annual Report. Six regular issues of the *Bulletin*, two of which were prepared by the Aquarium officers. A paper on "Cultivation of Fishes in Natural and Artificial Ponds," by the Director of the Aquarium, was reprinted, as well as additional articles on "Recent Progress in Black Bass Culture." "Chameleons of the Sea" and "The Color Changes in Fishes," by the Director of the Aquarium, were reprinted from the Century Magazine.

Two folders, prepared with great care, were sent out during 1910, and proved successful. The necessity of increasing the membership of the Society is the most pressing duty of the Committee. Members of the Society can greatly assist by sending in new names for membership.

PHEASANT EXPEDITION

As stated in the report of the Executive Committee for last year, funds were provided by Colonel Anthony R. Kuser, of Bernardsville, N. J., on a generous scale, for an expedition to secure living and dead specimens of the known species of pheasants and to study these birds in their native environment. This expedition, under Mr. C. William Beebe, our Curator of Birds, started from New York on December 29, 1909, and after a preliminary investigation of the material in the London Museum, sailed directly to Ceylon where field work began. India was next visited and the foot hills of the Himalayas were searched for specimens. From India the party went to Singapore, making that city the base for trips to Northern Borneo, Java, the Malay States and Burma. The expedition is now on its way to Central China, and after visiting Japan it will return to New York during the summer of 1911.

Upon the return of this expedition, the results and the field notes will be brought together in the form of a monograph on Pheasants, on which no expense or effort will be spared. The illustrations of the book are being prepared by such artists as Charles R. Knight, Louis Agassiz Fuertes and Bruce Horsfall.

NEW YORK AQUARIUM

During the year 1910 your Committee granted a leave of absence to Dr. Charles H. Townsend, Director of the Aquarium, to enable him to accept temporarily the position of Acting Director of the American Museum of Natural History, with the distinct understanding that he should return to the service of the Society early in 1911. During his absence the management of the Aquarium was intrusted to the Assistant Director, Dr. Raymond C. Osburn, under Dr. Townsend's supervision. The Aquarium has continued to enjoy the highest degree of public favor, and the necessity for an enlargement of the building becomes constantly more pressing.

The Aquarium, together with the Park, participated during the month of October in a Budget Exhibit, held under the auspices of the Board of Estimate and Apportionment; and on September 27, 1910, the American Fisheries Society held its Fortieth Annual Meeting at the Aquarium.

During the latter part of November, the First Annual Exhibit of the Aquarium Society was also held at the Aquarium. With a new and enlarged building opportunities for meetings and exhibitions of this sort can become permanent features. The March and November numbers of the *Bulletin* were especially devoted to the Aquarium in 1910, and for the future two of the yearly issues of the *Bulletin* will be devoted solely to the interest of this institution.

The usual amount of replacement and repairs, together with some small improvements to the mechanical departments of the Aquarium has been made, and additional skylights have been installed.

Additional electric lights have been supplied, enabling the Society to throw the Aquarium open to the public at night during the latter part of the summer. In 1911 the Aquarium will be kept open at night during the summer months.

The collections have been maintained at a high degree of efficiency, and their further extension is an impossibility owing to the lack of space. In addition to the West Indian seals, a

species which the Aquarium has been fortunate in having almost continually on hand, the two most interesting exhibits have been a pair of fur-seal pups from St. Paul Island, Behring Sea. These seals are the first fur-seals ever exhibited on the Atlantic Coast, with the exception of two which were in Washington during 1910.

The details of the administration of the Aquarium are fully set forth in the report of the Assistant Director of that institution.

ENLARGEMENT OF THE AQUARIUM

The entire year has been devoted to a careful revision of the preliminary plans for the proposed enlargement of the Aquarium in Battery Park, and many preliminary questions relative to the general contour of the building and ground plan may be regarded as settled. The second set of preliminary studies was published in the November *Bulletin*, and these plans have been submitted to the proper authorities and have met so far only with favorable comment. The plans were prepared by Mr. J. Stewart Barney, and are reprinted on pages 112-114 of this report.

The City will be asked, during the coming spring, for a bond issue for the construction of this building, and the Director of the Aquarium, Dr. Charles H. Townsend, will be sent abroad to inspect and study the existing aquariums in Europe, so that the detailed plans, when completed, will embody the very latest development. Your Committee intends to make the new Aquarium by far the greatest institution of its kind in the world, and at the same time to take advantage of the unique opportunities to establish a complete biological laboratory in connection therewith.

BRONX PARKWAY COMMISSION

The status of the proposed Bronx River Parkway, from Bronx Park to Kensico Dam, remains substantially unchanged. The project has been brought before the new City administration, and has been referred to a committee consisting of the Hon. Cyrus C. Miller, President of the Borough of the Bronx, and the Hon. William A. Prendergast, Comptroller of the City of New York. Mr. Miller has investigated the matter with the utmost care and with his engineers has gone over the ground and familiarized himself with the various features of the proposed Parkway. This sub-committee has not yet reported to the Board of Estimate and Apportionment, but the Commission

understands that the project in general meets with the approval of the authorities. If this be true, and the financial conditions of the City admit, it is believed that the valley of the Bronx can be saved from further desecration.

PLANS FOR 1911

At the present time, contracts have been awarded for an additional series of Bear Dens and an Eagle and Vulture Aviary, the latter to occupy the site in Bird Valley formerly occupied by the Moose Range. The plans for the Zebra House are practically completed and a contract will be awarded for its construction during the early spring.

Your Committee has decided that there is to be a Members' Day annually, on the third Monday in May of each year, May 15, 1911; a Sportsmen's Day annually, on the first Thursday in June of each year, June 1, 1911, and a Ladies' Day annually, under the auspices of the Ladies' Auxiliary, on the first Thursday of May, May 4, 1911.

In this connection your Committee desires to thank the Ladies' Auxiliary for their zeal and energy and for their great success in obtaining new members for the Society; and in stimulating the interest in the Society's work, not only among ladies, but among children. Your Committee desires to take this occasion to make special acknowledgment to the ladies who have contributed so large an amount of time and interest to this work.

OBITUARY

Your Committee reports with regret the death, during the past year, of Prof. Alexander Agassiz, and Dr. Arthur Erwin Brown, Honorary Members; Mr. George Crocker, an Associate Founder; Mr. John Stewart Kennedy, a Patron; Mrs. A. Newbold Morris, a Patron; Mr. C. C. Cuyler, Mr. Samuel D. Warren and Mr. William E. Sands, Life Members.

ACKNOWLEDGMENTS

Your Committee desires to close this report with the usual acknowledgments to the Directors of the Zoological Park and Aquarium and their respective staffs and assistants. The success, continued popularity and welfare of the Society and its collections, depend to a very large extent on the good will of its force; and your Committee desires to again express its appreciation of the loyal devotion of all those concerned in the welfare and care of the animals.

As an evidence of the cordiality between the City and the New York Zoological Society, the following extract from a letter addressed to the President of the Society by the executive head of the previous administration will be of general interest:

"During the last six years that I was Mayor, I took a great interest in the Zoological Park. I visited it often, and became quite familiar with its work. You may, or may not, know that I am more or less of an enthusiast on the subject of zoos, so much so that I have been to nearly every one of any importance.

"I do not think that there can be any question but that the New York Zoological Park is the best managed one I have ever seen. More than this, I believe that for every dollar the City spends upon the Zoological Park the people receive full value in return. This has been due to the untiring and public-spirited devotion of your colleagues in the management, and of yourself.

"I am, with kindest regards and best wishes,

"Yours very truly,

"GEORGE B. MCCLELLAN.

"December 21, 1910.

"To Professor Henry Fairfield Osborn,
"850 Madison Avenue."

Our relations with the Park Departments and the respective commissioners, have continued to be of the most satisfactory character. The Mayor, Comptroller, President of the Board of Aldermen and Presidents of the Boroughs of Manhattan and of the Bronx, and especially the Hon. Charles B. Stover, Commissioner of Parks for the Borough of Manhattan, and the Hon. Thomas H. Higgins, Commissioner of Parks for the Borough of the Bronx, have all manifested their good will and interest in the welfare and development of the Society, and have given every possible assistance, and your Committee takes this opportunity to express its cordial sense of appreciation therefor.

Respectfully submitted,

MADISON GRANT, *Chairman*,

JOHN S. BARNES,
PERCY R. PYNE,
SAMUEL THORNE,
WILLIAM WHITE NILES,

WM. PIERSON HAMILTON,
FRANK K. STURGIS,
LEVI P. MORTON,
HENRY FAIRFIELD OSBORN,
ex-officio.

Treasurer's Reports.

FOR THE YEAR ENDING DECEMBER 31, 1910.

General Fund.

Exhibit A.

Cash in Treasury, January 1, 1910..... \$207.80

No Receipts.

EXPENDITURES.

Cash transferred to Endowment Fund..... \$207.80

H. R. MITCHELL,
Chief Clerk.
January 1, 1911.

PERCY R. PYNE,
Treasurer.

Income Account.

Exhibit B.

Cash in Treasury, January 1, 1910..... \$10,448.53

RECEIPTS.

Special Subscriptions:

Wm. Rockefeller a/c fountain.....	\$6,020.54	
John D. Rockefeller	10,000.00	
Miscellaneous	25.00	\$16,045.54

Life Membership	\$3,200.00	
Annual Dues	14,010.00	
Sustaining Membership	3,140.00	
Aquarium Publications	22.55	
Interest	244.12	
Endowment Fund, Income Account, Transfer	51.11	20,667.78
		36,713.32

EXPENDITURES.

\$47,161.85

Stationery, printing and office supplies.....	\$ 1,136.57
General office expenses.....	1,990.91
Library	601.79
Treasurer's office expenses.....	740.15
Bulletin	2,334.24
Aquarium expenses	205.00
Museum supplies	16.00
Annual Report	1,863.77
Mailing circulars	2,095.99
Heads, horns and tusks.....	884.94
Salary and expenses of librarian.....	145.59
Expenses, Annual Meeting.....	626.00
Aid to employees	394.00
Secretary's salary	4,000.00
Photographs and slides.....	1,173.17
Library fund (transfer).....	1,000.00
Publications for members.....	224.19
Aquarium specimens	973.90
Audit of accounts.....	760.71
Employers' insurance	636.69
Munzie damage suit.....	12.10

Carried forward \$21,805.71

Exhibit B—Continued.

<i>Brought forward</i>			\$21,805.71	
Zoologica			964.51	
Engineering expenses			23.73	
Gartland case			230.81	
Expenses of receptions.....			248.00	
Designs and specifications			322.86	
Insurance			4.40	
Moving Rockefeller Fountain.....			5,595.49	
Miscellaneous expenses			956.83	\$30,152.34
<i>Balances:</i>				
Invested in 4% N. Y., L. & W. Terminal Bonds.....		\$9,951.11		
Sustaining membership available in 1911.....	\$ 520.00			
Sustaining membership available in 1912.....	520.00			
Sustaining membership available in 1913.....	520.00			
Cash balance available December 31, 1910.....	5,498.40	7,058.40	17,009.51	
				\$47,161.85

H. R. MITCHELL,
Chief Clerk.
 January 1, 1911.

PERCY R. PYNE,
Treasurer.

Maintenance Fund.

Exhibit C.

RECEIPTS.

Received from the City account Maintenance Appropriation of \$167,632.00 for the year.....	\$148,481.54	
Balance due from the City on account of Maintenance....	19,150.46	\$167,632.00

EXPENDITURES.

Maintenance of buildings and care of collections.....	\$47,124.07
Maintenance and care of grounds.....	46,377.92
General administration	16,495.21
Food for animals.....	34,748.39
Fuel	8,036.89
Tools and hardware	2,030.99
Paints and oils.....	1,661.66
Lumber	1,221.11
Uniforms and badges.....	1,116.08
Electric lighting	1,100.75
Sanitation	768.31
Plumbing supplies and expenses.....	761.64
Janitor's supplies	746.60
Telephone service	641.55
Freight and express.....	563.78
Postage and telegraph.....	548.77
Office supplies and printing.....	526.37
Furnace repairs and replacements.....	373.68
Sand and cement.....	243.93
Electrical supplies	240.71
Office furniture and fixtures.....	237.43
Rubber hose	220.24
Drugs and medicines	193.23
Repairs	166.30
Signs and labels	151.00
Glass and glaziers' supplies.....	147.49

<i>Carried forward</i>	\$166,444.10
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Exhibit C—Continued.

<i>Brought forward</i>	\$166,444.10	
Ice	109.85	
Nursery supplies	109.40	
Fencing and netting.....	104.61	
Mats and floor coverings.....	102.95	
Medical attd. (Employees).....	101.00	
Nursery stock and seeds.....	100.37	
Stable supplies and repairs.....	66.37	
Horses and vehicles	44.00	
Engineering supplies	22.88	
Surgical instruments and appliances.....	12.98	
Miscellaneous supplies	413.49	\$167,632.00

H. R. MITCHELL,
Chief Clerk.

PERCY R. PYNE,
Treasurer.

January 16, 1911.

Ground Improvement Fund

Exhibit D.

SHOWING STATUS OF APPROPRIATION NO. 5.

Unexpended balance of appropriation No. 4 brought forward.....	\$3,099.78
Reductions on various contracts, etc., old account.....	1,436.43

RECEIPTS.

Appropriated by Board of Estimate and Apportionment:

Available, July, 1908.....	\$65,000.00	
Available, August, 1909.....	10,000.00	
Available, August, 1910.....	84,500.00	159,500.00
Premium on bonds to December 31, 1910.....		796.06

EXPENDITURES.

\$164,832.27

By the Zoological Society:

Baird Court Boundary and Concourse.....	\$ 48.52	
Crematory and Fuel Shed.....	489.76	
Axis and Sika Deer fences.....	1,337.63	
Guard rails	1,763.79	
Boundary fences	3,303.58	
Elephant House walks and yards.....	1,797.94	
Forestry and planting.....	10,744.38	
Miscellaneous	3,389.49	
West Farms block	1,066.56	
New walks	1,020.08	
Llama yards	377.48	
Reconstruction of walks.....	2,385.94	
Filling Duck Aviary.....	572.10	
Boston Road Public Comfort Station.....	10.00	
North end of Baird Court.....	810.13	
Public Comfort Station, Elephant House.....	1,978.20	
Zebra and Wild Horse installation.....	2,161.46	
Small Deer House walks and yards.....	324.25	
Polar Bear Den.....	392.01	
New Bear Dens	210.00	
Administration Building	130.38	34,313.88

Carried forward \$34,313.88

Exhibit D--Continued.

Brought forward \$34,313.88

By the Zoological Society through Park Department:

Reconstruction of walks.....	\$2,644.91	
Forestry and planting.....	8,545.04	
Elephant House yards.....	1,809.58	
Boundary fences.....	323.58	
Guard rails.....	544.41	
New walks.....	290.74	
Miscellaneous.....	1,093.91	
West Farms block.....	35.50	
Llama yards.....	122.52	
Small Deer House yards.....	191.00	
Axis and Sika Deer fences.....	362.37	
Crematory and fuel shed.....	110.24	
North end of Baird Court.....	512.71	
Electric conduit.....	760.95	
New Administration.....	1,833.20	
Public Comfort Station near Elephant House.....	164.80	
Zebra and Wild Horse installation.....	856.86	
Furnishings and fittings for Administration Building.....	667.00	20,869.32

Through Park Department:

Contract, Construction of Eagles and Vultures Aviary.....	\$18,867.00	
Contract, H. F. English, Pub. Com. Sta. Ele. Hse.....	10,357.00	
Contract, Abraham & Straus Fur. Admn. Bldg.....	7,544.26	
Contract, repairing Bronx River Dam.....	6,813.00	
Contract, construction of Bear Dens.....	7,700.00	
Contract, granite coping, Baird Court.....	772.00	
Miscellaneous expenditures through Park Dept.....	1,208.63	53,261.89

Balance available for expenditure, December 31, 1910..... 56,387.18

\$164,832.27

H. R. MITCHELL,
Chief Clerk.

PERCY R. PYNE,
Treasurer.

January 1, 1911.

Animal Fund.

Exhibit E.

Cash in Treasury, January 1, 1910..... \$19,861.25

RECEIPTS.

Receipts from Park:

Admissions	\$ 9,909.90	
Checking	28.25	
Miscellaneous	123.33	
Sale of Animals.....	2,482.65	
Rent	60.00	
Rocking Stone Restaurant.....	1,000.00	
Privilege Department	13,000.00	26,604.13
		<hr/> \$46,465.38

EXPENDITURES.

Purchase of Animals:

Mammals	\$6,424.90	
Birds	4,802.82	
Reptiles	1,512.33	
Insect Collection	51.47	\$12,791.52
Express and other charges.....	1,261.39	
Traveling and other expenses.....	246.24	\$14,299.15
		<hr/>
Cash balance, December 31, 1910.....		32,166.23
		<hr/> \$46,465.38

H. R. MITCHELL,
Chief Clerk.

January 1, 1911.

PERCY R. PYNE,
Treasurer.

Stokes' Bird Fund.

Exhibit F.

Invested in Illinois Central Railway 4% Gold Bonds..... \$5,056.46
Cash Balance, January 1, 1910..... 147.43 \$5,203.89

RECEIPTS.

Interest 206.47

\$5,410.36

No Expenditures.

Invested in Illinois Central Railway, 4% Gold Bonds..... \$5,056.46
Cash balance, December 31, 1910..... 353.90

\$5,410.36

H. R. MITCHELL,
Chief Clerk.

January 1, 1911.

PERCY R. PYNE,
Treasurer.

National Collection of Heads and Horns.

Exhibit G.

Transferred from Equitable Trust Co. by Madison Grant, Former Treasurer	\$ 2,041.69
--	-------------

RECEIPTS.

Special Subscriptions:

Charles Farrelly	\$ 50.00	
Frank Hart	100.00	
Louis Maurer	5.00	
M. F. Westover.....	3.00	
Thos. Rowland	10.00	
W. F. Gibson.....	5.00	
Edward Russ	10.00	
James Weeks	5.00	
H. A. Caesar.....	5.00	
W. H. Chase.....	5.00	
A. St. John Newbury.....	5.00	
William R. Coe.....	10.00	
Townsend Lawrence	10.00	
John T. Pierce, Jr.....	5.00	
Archibald Rogers	5.00	
G. M. Laughlin, Jr.....	5.00	
Bascom Little	5.00	
John T. Paul	15.00	
George Shiras, 3rd.....	10.00	268.00

Interest	23.20
----------------	-------

EXPENDITURES.

 \$2,332.89

Heads and Horns.....	\$1,096.75	
Express and other charges	54.70	\$1,151.45
Cash balance, December 31, 1910.....		1,181.44
		\$2,332.89

H. R. MITCHELL,
Chief Clerk.
January 1, 1911.

PERCY R. PYNE,
Treasurer.

Library Fund.

Exhibit H.

RECEIPTS.

Special Subscriptions:

Cleveland H. Dodge	\$1,000.00	
Helen M. Gould.....	1,000.00	\$2,000.00
Interest		26.94
		<hr/>
		\$2,026.94
EXPENDITURES.		
Subscription to periodicals.....	\$ 13.00	
Books, pamphlets, etc.....	231.16	
Express and other charges.....	30.33	274.49
		<hr/>
Cash balance December 31, 1910.....		1,752.45
		<hr/>
		\$2,026.94

H. R. MITCHELL,
Chief Clerk.
 January 1, 1911.

PERCY R. PYNE,
Treasurer.

Aquarium Maintenance Fund.

Exhibit I.

Appropriation, New York City on account of Aquarium Maintenance
 for 1910 \$46,000.00

EXPENDITURES.

Pay Rolls	\$30,202.16	
Coal	4,180.37	
Telephone	163.63	
Electric Light	649.23	
Ice	70.86	
Uniforms	111.85	
Cartage of Fishes and Tanks.....	256.26	
Stationery and Books.....	201.79	
Fish Food	2,719.22	
Live Specimens	35.50	
Incidental Expenses (office).....	122.89	
Contingencies	383.12	
General Supplies	2,304.78	
Materials for Repairs and Replacements by Depart- mental Labor	598.93	
Repairs and Replacements by Contract or Open Orders..	2,873.74	
Gas	1,100.53	\$45,974.86
Balance unexpended		25.14
		<hr/>
		\$46,000.00

RAYMOND C. OSBURN,
Asst. Director.

Aquarium Improvement Fund.

R. B. F., R. D. P. No. 1.

Exhibit K.

Revenue Bond Fund issue for alterations and Repairs to Aquarium skylights		\$5,000.00
EXPENDITURES.		
Charles Wille, Contract for above alterations.....	\$4,740.00	
H. O. Chapman, Architect's Commissions.....	237.00	\$4,977.00
Balance available for expenditure December 31, 1910.....		23.00
		<hr/>
		\$5,000.00

JOHN J. ODELL.

*Chief Bookkeeper, Department of Parks,
Manhattan and Richmond.*

January 1, 1911.

Aquarium Improvement Fund.

Corporate Stock C. D. P. No. 4.

Exhibit L.

RECEIPTS.

Balance available, Report 1909.....	\$530.25
Premium Corporate Stock.....	1.57
Premium Corporate Stock.....	.06
	<hr/>
	\$531.88

EXPENDITURES.

1910.		
February 18, Pay Roll.....	\$86.38	
March 2, Pay Roll.....	90.00	
March 9, Pay Roll.....	11.00	\$187.38
Balance available for Expenditure December 31, 1910.....		344.50
		<hr/>
		\$531.88

JOHN J. ODELL,

*Chief Bookkeeper, Department of Parks,
Manhattan and Richmond.*

January 1, 1911.

Endowment Fund.

Exhibit M.

Cash in Treasury, January 1, 1910..... \$10,100.00

Special Subscriptions:

RECEIPTS.

Jacob H. Schiff.....	\$25,000.00	
Cleveland H. Dodge.....	25,000.00	
Samuel Thorne	25,000.00	
George F. Baker.....	25,000.00	
J. P. Morgan.....	20,000.00	
Ogden Mills	10,000.00	
Levi P. Morton.....	10,000.00	
E. S. Harkness.....	5,000.00	
Andrew Carnegie	5,000.00	
Emily Trevor	5,000.00	
Nelson Robinson	5,000.00	
George J. Gould.....	5,000.00	
Percy R. Pyne.....	5,000.00	
Samuel P. Avery.....	5,000.00	
John D. Archbold.....	5,000.00	
Mrs. Frederick F. Thompson.....	5,000.00	
Geo. W. Perkins.....	5,000.00	
Fred'k G. Bourne.....	5,000.00	
Henry A. C. Taylor.....	5,000.00	
John L. Cadwalader.....	5,000.00	
F. K. Sturgis.....	5,000.00	
Robert S. Brewster.....	5,000.00	
Serena Rhinelander	2,500.00	
Lispnard Stewart	2,500.00	
Grant B. Schley.....	2,500.00	
F. Augustus Schermerhorn.....	1,000.00	
Helen M. Gould.....	1,000.00	
Dr. Walter B. James.....	1,000.00	
C. N. Bliss.....	500.00	
H. C. von Post.....	250.00	
Lloyd Phoenix	100.00	
Alfred N. Beadleston.....	100.00	
Woodbury G. Langdon, Jr.....	5.00	226,455.00

General Fund, Transfer..... 207.80

Endowment Fund, Income Account, Transfer..... 293.33

Investments:

Westchester Racing Asso. 5% net, First Mtg. Bonds.....	\$20,000.00	
Clara N. Gibert and Others, 6% 2nd Mtg.....	3,000.00	
\$5000 par Colorado Southern 4% Bonds.....	4,750.00	
5000 par Michigan Air Line 4% Bonds.....	4,950.00	
10000 par New York City 4% Bonds.....	9,925.00	
10000 par St. Paul, Minn. & Manitoba 4% Bonds.....	9,800.00	
50000 par U. S. Steel, Sinking Fund 5% Bonds.....	51,812.50	
50000 par American Tel. and Tel. 4% Bonds.....	45,250.00	
25000 par Rhode Island Sub. 4% Bonds.....	21,250.00	
20000 par New York City (1958) 4% Bonds.....	19,875.00	
10000 par New York City (1957) 4% Bonds.....	9,962.50	
10000 par New York City (1958) 4% Bonds.....	9,962.50	
20000 par Chicago & No. West. Gen. 4% Bonds.....	19,750.00	\$230,287.50
Accrued interest on securities at time of purchase.....	2,158.31	
Cash balance uninvested December 31, 1910.....	4,610.29	

\$237,056.13

H. R. MITCHELL,
Chief Clerk.
January 1, 1911.

PERCY R. PYNE,
Treasurer.

Securities Owned.

Exhibit N.

ENDOWMENT FUND.

\$ 20,000	Westchester Racing Association First Mortgage 5 per cent. Guaranteed Gold Bonds.
5,000	Colorado & Southern Ry. Co. First Mortgage 4 per cent. Gold Bonds.
5,000	Michigan Central R. R. Co. First Mortgage 4 per cent. Air Line Bonds.
10,000	Corporate Stock of the City of New York, 1957, 4 per cent.
10,000	St. Paul, Minneapolis & Manitoba Ry. Co. Consolidated Mortgage 4 per cent. Gold Bonds.
50,000	United States Steel Corporation 5 per cent. Sinking Fund Gold Bonds.
50,000	American Telephone & Telegraph Co. Collateral Trust 4 per cent. Bonds.
25,000	Rhode Island Suburban Ry. Co. First Mortgage 4 per cent. Gold Bonds.
25,000	Corporate Stock of the City of New York, 1958, 4 per cent.
5,000	Corporate Stock of the City of New York, 1958 (Rapid Transit), 4 per cent.
10,000	Corporate Stock of the City of New York, 1957 (Rapid Transit), 4 per cent.
20,000	Chicago & Northwestern Ry. Co. 4 per cent. General Mortgage Bonds.
3,000	Second Mortgage, Clara M. Gibert and others, 6 per cent.

\$238,000

INCOME ACCOUNT.

10,000	New York, Lackawanna & Western Ry. Co. Terminal and Improvement Bonds, 4 per cent.
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STOKES' BIRD FUND.

5,000	Illinois Central Railway Co. Refunding Mortgage 4 per cent. Gold Bonds.
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\$253,000

H. R. MITCHELL,
Chief Clerk.
 January 1, 1911.

PERCY R. PYNE,
Treasurer.

Endowment Fund Income Account.

Exhibit P.

RECEIPTS.

Interest from Endowment Fund.....	\$1,517.47
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EXPENDITURES.

Transferred to Endowment Fund on account accrued interest on securities paid at time of purchase.....	\$293.33	
Transferred to Income Account accrued interest on N. Y., L. & W. Ry. Co. Terminal Bonds paid at time of purchase	51.11	\$344.44
Cash Balance, December 31, 1910		1,173.03
		<hr/> \$1,517.47

H. R. MITCHELL,
Chief Clerk.
 January 1, 1911.

PERCY R. PYNE,
Treasurer.

The Audit Company of New York.

THE CERTIFICATES OR REPORTS UPON AUDITS OR EXAMINATIONS MADE BY THE AUDIT COMPANY OF NEW YORK ARE DELIVERED TO CLIENTS WITH THE UNDERSTANDING IN EACH CASE THAT ANY ADVERTISEMENT OR PUBLICATION OF SUCH CERTIFICATES OR REPORTS OR PUBLISHED REFERENCE THERETO SHALL BE IN A FORM TO BE APPROVED BY THE PRESIDENT OF THIS COMPANY.

HUGH D. AUCHINCLOSS, Esq.,
 Chairman, Auditing Committee,
 New York Zoological Society,
 22 William Street,
 New York City.

DEAR SIR:

Agreeably to your request, we have audited the books and accounts of the NEW YORK ZOOLOGICAL SOCIETY, for the year ending December 31, 1910.

The results of this audit are presented, attached hereto, in twelve Exhibits of Cash Receipts and Disbursements, as follows:

EXHIBIT

"A"	—	GENERAL FUND
"B"	—	INCOME ACCOUNT
"C"	—	MAINTENANCE FUND
"D"	—	GROUND IMPROVEMENT FUND
"E"	—	ANIMAL FUND
"F"	—	STOKES' BIRD FUND
"G"	—	NATIONAL COLLECTION OF HEADS AND HORNS
"H"	—	LIBRARY FUND
"I"	—	AQUARIUM FUND
"M"	—	ENDOWMENT FUND
"N"	—	SECURITIES OWNED
"P"	—	ENDOWMENT FUND—INCOME ACCOUNT

The Cash on hand as of the date of our examination was counted and found correct. The Cash on deposit was confirmed by certificates received from the depositories. The securities as called for in Exhibit "N" were also examined and found as reported by the Treasurer.

We certify that the accompanying Statements are true Exhibits of the accounts of the Society, with the exception of the expenditures shown to have been made through the Park Department. These have not been verified by us. The amounts are presented in Exhibit "D" and aggregate \$20,869.32 and \$53,261.89. Also the Aquarium Improvement Funds, Exhibits "K" and "L" of the Treasurer's Report, have not been confirmed for the same reason.

We have also examined the Cash receipts and disbursements of the Privilege Department for the twenty-four months ending December 31, 1910, and have found them to be correct according to the records. The details of these accounts are covered in a separate report.

Very truly yours,

THE AUDIT COMPANY OF NEW YORK

New York,
 March 24, 1911.

A. W. DUNNING, G. H. BOWERS.
President. *Secretary.*

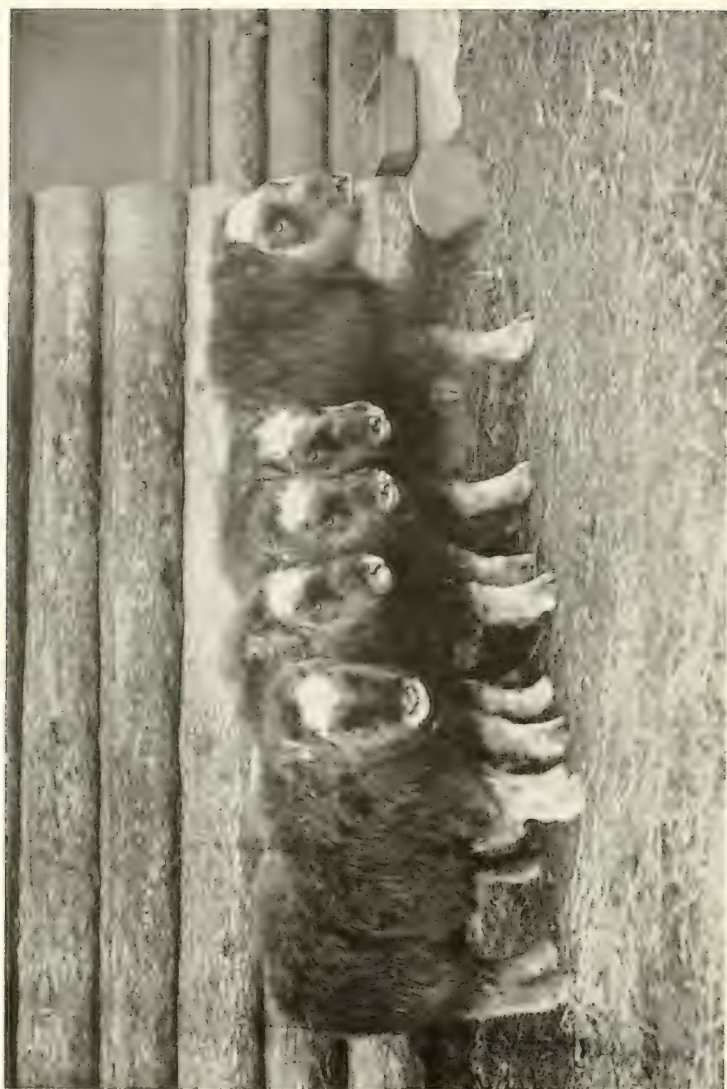
NEW YORK, April 1st, 1911.

*To the President and Board of Managers of
The New York Zoological Society:*

The undersigned being a majority of the Auditing Committee of the New York Zoological Society appointed for the year ending December 31, 1911, in the absence of their Chairman, Mr. Hugh D. Auchincloss, who is abroad, hereby report that they have examined the special audit of the books and accounts of the New York Zoological Society for the year ending December 31, 1910, made by The Audit Company of New York, and are satisfied that the same is a comprehensive and complete audit of said books and accounts and sets forth clearly the expenditures and receipts of the various accounts and certifies that cash on hand and on deposit has been counted and found correct and that the securities in which the Society's funds are invested have been examined and found as reported, and that all the accounts of the Society have been verified by the said auditor, except certain expenditures shown on Exhibits D, K and L of The Audit Company's report, which expenditures were made through the Park Department, the moneys not passing through the hands of the Society and which expenditures we understand are checked by the Comptroller and are not verified by this audit.

Respectfully submitted,

<i>Auditing Committee</i> {	WILLIAM WHITE NILES,
	<i>Acting Chairman.</i>
	C. LEDYARD BLAIR.



HERD OF MUSK-OX.

REPORT OF THE DIRECTOR OF THE ZOOLOGICAL PARK

TO THE BOARD OF MANAGERS

DURING the year 1910 the Zoological Park made its usual progress, both in collections and permanent improvements. The collections were greatly strengthened all along the line, the Administration Building and one other were completed, the annoying water situation on Bronx Lake was corrected by important new work upon the dam, and two important contracts for new animal installations were awarded.

Fortunately, the progress of the Park was free from calamities, and the death losses in the collections were never before so small.

Both to the Zoological Society and the public at large, the two events of 1910 of the greatest importance were the completion and occupancy of the Administration Building and the temporary installation therein of the National Collection of Heads and Horns.

HEADS AND HORNS

In view of the alarmingly rapid disappearance of wild life, the people of to-day little realize the importance, to the Americans of one hundred years hence, of the beginning of a serious national effort to bring together, before it is too late, a large collection of notably fine heads and horns to represent the most interesting species of animals now living. It is fit and proper that New York City should possess, and exhibit on a scientific basis to the world at large, one of the world's finest collections of big-game trophies. Those who are familiar with the quality of the 695 specimens that have been acquired during the short space of three years can form a fairly correct estimate of the result that fifty years of similar effort will produce. Although the collection of to-day is highly interesting and scientifically valuable, its chief value lies in the fact that it represents a serious, well-organized *foundation* upon which the sportsmen of America and their friends, both at home and abroad, can and will build up a collection that presently will become of great importance and value to the world.

In all comparisons of horns and antlers, it is both right and necessary that the tape line should play an important part in determining records and fixing comparative values. In one

sense it is therefore quite fair to judge every important collection by the number of record or world-record specimens it contains. A record head is one which by reason of its commanding size or other points of special excellence, is entitled to a place in every printed list of the world's best specimens; and a head may thus stand as a record head without its being implied by that title that it is the longest or largest of all known specimens of its kind. A *world-record* specimen is supposed to be, according to all available information, the longest or largest of its kind in the world.

The following list of the more noteworthy record horns and antlers in the National Collection is of interest:

WORLD RECORDS, SO FAR AS KNOWN

- No. 148. Lower California Big-Horn.
- “ 269. Derby Eland.
- “ 485. Lechee Antelope.
- “ 427. Greater Kudu.
- “ 528. Rooi Reedbuck.
- “ 80. Kenai Caribou.
- “ 125. Grant Caribou.
- “ 645. Newfoundland Caribou.
- “ 618. Mule Deer, (for spread).
- “ 243. Mule Deer, (for length).
- “ 116. Sudan African Elephant tusk, (for length).
- “ 681. Pacific Walrus tusks.

SECOND RECORDS, FOR THE WORLD

- No. 11. Siar Argali.
- “ 675. Barren-Ground Musk-Ox.
- “ 200. Arizona Wapiti.
- “ 421. Springbuck, female.
- “ 116½. Sudan African Elephant tusk, (for length).

The two picture galleries in the Administration Building have already proven inadequate to contain the collection of heads and horns, even at the end of the third year of its existence. All the walls are so crowded with specimens that a systematic arrangement is at present quite impossible. It is imperatively necessary that a special building for the collection should be provided, forthwith, in order that it may daily be seen and enjoyed by the millions of persons who visit the Park, and at the same time that the specimens may be protected from dust and insect pests by air-tight cases of glass.

It is a satisfaction to be able to report that the collection contains a number of valuable gifts which were received from English sportsmen and friends, notably Messrs. Percy Radclyffe, F. C. Selous, R. A. Ward, W. Hesketh Prichard, Rowland Ward and William Jamrach. The most notable accessions of the year were the following:

A white rhinoceros head from ex-President Roosevelt; African elephant head, deposited by Samuel Thorne; bongo from James L. Clark; New Brunswick moose from Edwin C. Kent; fifty-nine-inch American elk from the Iowa State University; glacier bear skin from G. Frederic Norton; barasingha deer and Congo buffalo from Frank Hart (Doylestown, Pa.), and from Mr. H. Casimir deRham the following rare and choice specimens: 2 Astor markhor, 2 Himalayan ibex, Indian buffalo, Karelin sheep, Turkestan sheep, sable antelope, barren-ground musk-ox and Newfoundland caribou.

ATTENDANCE OF VISITORS

The attendance of visitors at the Zoological Park, as shown by the turnstile records, appears below. The total shows that the attendance during 1909 was increased by the Hudson-Fulton Celebration to the number of about 200,000.

	1909.	1910.
January	36,812	47,649
February	110,095	47,679
March	73,833	126,936
April	137,912	103,349
May	213,028	195,997
June	142,846	125,705
July	218,626	198,486
August	225,775	169,657
September	184,257	184,161
October	134,459	137,423
November	90,915	70,595
December	46,395	33,705
Total for the year.....	1,614,953	1,441,342

DEPARTMENT OF MAMMALS

William T. Hornaday, Curator; Raymond L. Ditmars, Assistant Curator.

Notwithstanding the fact that the opening of the year 1910 found all our installations for mammals densely populated, and



POLAR BEAR SILVER KING IN THE NEW QUARTERS ERECTED FOR HIM IN THE ZOOLOGICAL PARK.



TRANSFERRING SILVER KING TO HIS PERMANENT QUARTERS IN THE ZOOLOGICAL PARK.

with very little room available for additions, many opportunities to strengthen the collections were deemed too good to be lost.

The most noteworthy accession of the year was the gift of Mr. Paul J. Rainey, consisting of six white-fronted musk-ox calves from Ellesmere Land, two young Atlantic walrus, two polar bears and one blue fox. Of the musk-ox calves, one arrived bearing an old wound, from which it died shortly after arrival. The largest polar bear, called Silver King, is probably the only fully-adult male bear of its species ever captured alive and brought uninjured to a zoological park. The strength and ferocity of this huge animal rendered its transfer, in a flimsy cage, from the ship to the Park, a matter attended with considerable danger, lest the bear should tear its way out of its cage and escape. But for the liberal use of chloroform in half-way anesthetizing the bear while in transit, the troublesome captive might have earned for himself a tragic end.

For Silver King it was necessary to construct with all possible haste a small cage which can be cleaned wholly from without, because neither man nor beast ever can come within that bear's sphere of influence without being quickly destroyed. The other new polar bear could be accommodated only in one of the outside cages of the Lion House, where it will have to remain until the ten new bear dens, now under contract, are erected.

The female musk-ox from Melville Island, purchased in 1909, continues to thrive, and has made excellent growth. The present herd of six musk-ox is one of the greatest rarities to be found on exhibition, but unfortunately in the entire lot there is only one female. The five specimens presented by Mr. Rainey have been maintained in perfect health, and we believe that all of them will live to maturity.

The young walrus arrived in a much emaciated condition, but thanks to the judicious care bestowed upon it by its keeper, it quickly began to accept food. Its regular food consists of soft-shelled clams, supplemented by a small quantity of fresh cod-fish. Of the former, it partakes with keen relish. For several weeks the walrus consumed twenty pounds of food per day, and gained in weight at the rate of three-quarters of a pound per day. Upon arrival, on September 10, 1910, the animal weighed 150 pounds, and on January 14, 1911, it weighed 235 pounds.

The walrus is quartered at the north end of the Alligator Pool, near the eastern end of the Reptile House, and it has survived the winter without any apparent discomfort.



SPECTACLED BEAR.

Presented by Edgar Beecher Bronson.

Among the most noteworthy accessions of the year were the following: a pair of elands, presented by the Duke of Bedford; a two-year-old spectacled bear, (*Ursus ornatus*), presented by Edgar Beecher Bronson; three solenodons, from Hayti, presented by Mr. and Mrs. Franklin Adams, of Washington, D. C.; one solenodon, deposited by the Museum of Comparative Zoology, Cambridge, Mass.; a pair of young Siberian tigers, a snow leopard, a Congo sitatunga, two chimpanzees, an orang-utan, a chacma baboon and two wanderoo monkeys.

The greatest rarity of the year's accessions was the half-grown male spectacled bear that we owe to the enterprise and

good management, as well as the good will, of Mr. Edgar Beecher Bronson, author of "Through Closed Territory." For the past ten years our efforts to secure a specimen of this rarest of all American bears have been persistent and continuous; but until the present year, unsuccessful. In Quito, Ecuador, Mr. Bronson obtained for us a lusty young male bear, and through the good offices of the American Consuls at Guayaquil and Panama, Messrs. Herman R. Dietrich and Alban G. Snyder, coupled with the excellent co-operation of the Panama Steamship Company, our prize bear reached us in most perfect condition.

This species is remarkable for two things: its extraordinary rarity in collections, and the two huge dull-white circles that surround the eyes, like a pair of spectacles magnified about six diameters. The general color of the animal is a dense, glossy black, but there are bold white markings on the cheeks and throat. So far as we are aware, this specimen is the first live spectacled bear that has ever been exhibited in North America; and it is doubtful whether there is to-day even one specimen alive in all Europe. Several tours of the European zoological gardens since 1896, have revealed only one specimen, at Amsterdam, in 1902.

BIRTHS DURING YEAR 1910

The birth rate during 1910, in the mammal collection, has been entirely satisfactory, with the exception that among the deer and bears births have been so numerous as to cause serious embarrassment. In several collections we have been compelled to prevent breeding in order to keep from overcrowding our accommodations for animals.

The list of births for the year is as follows:

4 Axis Deer.	1 Rocky Mountain Goat.
1 Sika Deer.	2 Persian Ibex.
1 Hog Deer.	2 Himalayan Tahr.
3 Fallow Deer.	2 Aoudad.
6 Eld Deer.	1 Mouflon.
3 Barasingha Deer.	2 Peccaries.
6 Red Deer.	2 Hyrax.
1 Altai Wapiti.	2 Grizzly Bears.
7 American Elk.	3 Hybrid Russian and Brown Bears.
2 White-Tailed Deer.	1 Litter Timber Wolves.
2 Mule Deer.	1 Litter Common Coyotes.
1 Congo Sitatunga.	1 Litter Black-Backed Jackals.
1 Nylghai.	1 Litter Egyptian Porcupine Mice.
6 American Bison.	4 Ring-Tailed Lemurs.

In the mammal collection the losses by death have been very trifling. The only noteworthy departures were an aged kiang, a Bengal tiger and a Baker roan antelope.

The general physical condition of the mammals has been very satisfactory. There have been no epidemics, and the important animals have been kept in a state of health so plainly apparent that it has been a pleasure to look at them.

The census for the close of the year is as follows:

MAMMALS OF THE ZOOLOGICAL PARK

(*Osborn's Classification.*)

	Species.	Specimens.
MARSUPIALIA	6	13
INSECTIVORA	1	1
CARNIVORA	67	140
Pinnipedia	2	2
RODENTIA	46	245
EDENTATA	3	7
PRIMATES	41	98
ARTIODACTYLA (Even-toed Ungulates) ..	60	288
PERISSODACTYLA (Odd-Toed Ungulates)	10	14
PROBOSCIDEA	3	5
HYRACOIDEA	1	2
Total	240	815

THE ECONOMIC RODENT-REPTILE COLLECTION.*

As an answer to a frequent question—"Of what use are reptiles?"—a new collection has been installed in the Reptile House. It is supplied with descriptive labels, and serves several purposes. In the first place there is presented an elaborate series of the small gnawing animals, or rodents, a number of the species of which are highly injurious to the interests of agriculturists; secondly, the exhibition contains a large series of those species of snakes that prey upon the destructive rodents,—thus presenting for observation the serpents of marked economic value. Finally, the entire series stands as a clear demonstration of the perfect logic of Nature in which the production of all animal life is carefully balanced; for a part of the exhibition is composed of representative species of mammals that, in turn, prey upon the serpents, thus keeping even the destroyers of the smaller injurious creatures within bounds!

* Report prepared by Curator Ditmars.

During the past two years the collection of rodents has been steadily growing in importance. The following is a list of the species on exhibition at the close of the year 1910:

RODENTS IN THE ZOOLOGICAL PARK

HARES AND RABBITS (*Leporidae*)

Mexican Swamp Rabbit *Lepus palustris*
 Cotton-Tail Rabbit..... *Lepus palustris mallurus*

Domestic Rabbits, various breeds. (Nursery stock.)

SQUIRRELS AND MARMOTS (*Sciuridae*)

Thirteen-Lined Spermophile..... *Spermophilus 13-lineatus*
 Desert Spermophile..... *Spermophilus leucurus*
 Richardson Spermophile *Spermophilus richardsoni*
 Woodchuck *Arctomys monax*
 Prairie-"Dog" *Cynomys ludovicianus*
 European Squirrel..... *Sciurus vulgaris*
 Mexican Squirrel..... *Sciurus aureogaster*
 Central American Squirrel..... *Sciurus variabilis*
 Cuban Squirrel..... *Sciurus chrysurus*
 Variable Squirrel..... *Sciurus griseo-flavus*
 Gray Squirrel..... *Sciurus carolinensis*
 Black Squirrel..... *Sciurus carolinensis niger*
 Fox Squirrel..... *Sciurus ludovicianus*
 White-Headed Squirrel *Sciurus macrourus*
 Malabar Squirrel..... *Sciurus malabaricus*
 Chipmunk *Tamias striatus*
 African Ground Squirrel *Xerus capensis*
 Flying Squirrel *Sciuropterus volans*

BEAVERS (*Castoridae*)

American Beaver *Castor canadensis*

KANGAROO RATS (*Heteromyidae*)

Kangaroo Rat..... *Dipodomys merriami*

POCKET GOPHERS (*Geomyidae*)

Harsh-Coated Pocket Gopher..... *Geomys hispidus*

DORMICE (*Gliridae*)

Squirrel-Tailed Dormouse..... *Myoxus glis*
 Lesser Dormouse..... *Myoxus dryas*
 English Dormouse..... *Muscardinus avellanarius*

MICE AND RATS (*Muridae*)

Unusual Color Phases of the Domestic Mouse.....	<i>Mus musculus</i>
Japanese Waltzing Mouse.....	<i>Mus musculus</i>
Black Rat.....	<i>Mus rattus</i>
Black-and-White Rat.....	<i>Mus norvegicus</i>
Gray-and-White Rat.....	<i>Mus norvegicus</i>
Porcupine Mouse.....	<i>Acomys cahirinus</i>
Egyptian Gerbille.....	<i>Gerbillus pyramidum</i>
Musk Rat.....	<i>Fiber zibethicus</i>
Cotton Rat.....	<i>Sigmodon hispidus</i>

JERBOAS (*Dipodidae*)

Greater Jerboa.....	<i>Dipus aegyptius</i>
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COYPU AND SPINY RATS (*Octodontidae*)

Coypu Rat.....	<i>Myocastor coypu</i>
Hutia: Cuban Tree Rat.....	<i>Capromys pilorides</i>
Short-Tailed Hutia.....	<i>Capromys browni</i>

PORCUPINES (*Hystriidae*)

Canada Porcupine.....	<i>Erethizon dorsatus</i>
Brazilian Porcupine.....	<i>Sphingurus prehensilis</i>
African Porcupine.....	<i>Hystrix cristata</i>

VISCACHAS AND CHINCHILLAS (*Chinchillidae*)

Viscacha.....	<i>Lagostoma trichodactylus</i>
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AGOUTIS (*Dasyproctidae*)

Golden Agouti.....	<i>Dasyprocta agouti</i>
Gray Agouti.....	<i>Dasyprocta prymnolopha</i>

CAVIES (*Caviidae*)

Domestic Cavy.....	<i>Cavia porcellus</i>
Capybara.....	<i>Hydrochoerus capybara</i>
Patagonian Cavy.....	<i>Dolichotis patagonica</i>

THE INSECT COLLECTION

Through the diligent efforts of Mr. Ditmars and Keeper Charles Snyder, a collection of insects was formed and placed on exhibition during the early summer of the past year. While this first exhibit was not elaborate, it excited such interest that it was decided to enlarge it, by taking advantage of the season which then was at its best for insect collecting. Mr. Ditmars reports upon this collection as follows:

"A series of long shelves was built in the pavilion between the Small-Mammal House and the Ostrich House, and thirty-five glass-fronted cages, together with a row of aquaria for aquatic specimens, were installed. A number of collecting trips were



CAPTURING A YOUNG ATLANTIC WALRUS.
Rainey Expedition.



YOUNG ATLANTIC WALRUS IN THE ZOOLOGICAL PARK.

made into the country within a radius of twenty-five miles of the city, with such marked success that by the middle of July the collection was pronounced by a number of visitors to equal in interest any exhibition of the kind heretofore attempted in this country, or in Europe. In view of the marked interest created by this display, the insect collection will hereafter be a permanent feature of the Park.

"There are so many possibilities in exhibiting living insects that it was difficult to select groups to feature for the summer. The first steps, however, were directed toward exhibiting a series of the different insects that "sing," and also a series of species injurious to the interests of the agriculturists, together with a number of insects of economic value. The collection of singing insects was such a marked success that it will be continued during the coming summer. The other features will be changed every few weeks during the warm season.

"We are now gathering from both the Old World and the New, a fine collection of the larger silk moths. The cocoons will be shown on panels, and inasmuch as a number of the moths will be emerging daily, this exhibit should be popular. During the winter the insect collection is made up largely of tropical species; and in this series we include the large bird-killing spiders, scorpions and centipedes, even though these creatures are not to be classified as true insects.

"The collection of singing insects of the past summer was composed of the meadow locust, greater and lesser cone-headed locusts, the Katy-did, broad-winged locust, field cricket, lesser field cricket, smooth-winged cricket and two species of tree crickets. There were about five hundred specimens in the collection, and at times the noise made by them was so great that visitors had to shout to one another to make their own voices clear. The sounds coming from this collection varied according to the time of day. It was late in the afternoon, when the larger locusts commenced their singing (which is continued throughout the night), and inasmuch as the strictly diurnal species were yet active, the insect chorus was quite vociferous.

"It was only with considerable difficulty that the singing insects were collected. It is impossible to capture the larger locusts during the day, for they are keen of sight and, while they begin singing late in the afternoon, their song is intermittent, and stops as soon as they note the presence of the collector. The best time to capture them is at night, when the collector stalks the loudest singers, and by approaching within definite investigating distance, can accurately locate the insects by bringing into use

an electric flash-lamp. The glare of the light usually causes the insect to stop its calls, but it remains motionless upon a branch or leaf and may be grasped with a delicate pair of forceps, provided the movements of the collector's arm are performed outside the rays of light. If the locust has become silent and cannot be detected when the light is thrown upon it, the collector simply switches off the light and remains quiet. In a few minutes the creature continues its song, when its exact location is again determined. Working in this manner, the capture of the larger singing insects is a comparatively simple matter to one skilled in detecting such creatures. What the collector looks for is not the insect's body, which in color matches the surrounding vegetation, but the long, waving antennæ. These may be immediately detected by the trained eye, while the outlines of the leaf-green body are extremely hard to see unless the locust is moving. In this way the night songsters of a big meadow are collected, one by one, and the collector leaves behind him a silent field that a few hours before resounded with the stridulations of the insect chorus.

"Our search for the elusive Katy-did, the loudest singer of the local locusts, was for a time quite unsuccessful. Judging from the many queries concerning this tree-top songster of the late summer, without this species the collection of singing insects would have appeared incomplete. Some specimens were located in high trees, along the roads of Westchester County. In an endeavor to get them a swivel searchlight was mounted on an automobile, but a tree-climbing expedition was found to be much more difficult than stalking in the open meadows, because in the former the swaying of the branches caused the locusts to stop singing before the investigator could get near enough to discover their exact whereabouts. By good fortune we obtained a number of specimens from Sullivan County, where the species was found living in small saplings and easily collected with the flash-lamp. During August and September the Park resounded with the characteristic calls of this species, many specimens of which we liberated.

"Among the more interesting insects exhibited, were the walking stick, several examples of the big praying mantis, of the tropics, the huge red-winged locust of the South, the Egyptian scarab, the luminous beetle of Central and South America, and a number of broods of silk worms. The life history of the mosquito was demonstrated by a series of tanks, and adjoining these was an exhibit of the natural enemies of these pests. One of the most popular features of the collection was the series of

tanks showing the larvae of various species of dragon flies, or mosquito hawks. The larvae of these insects fed daily upon the living mosquito larvae. At the close of the year, with the collection wintering in the Reptile House, the most interesting feature is a large female bird-killing spider, from South America, with her egg-cocoon, which she guards most carefully."

The insect collection is supplied with interesting descriptive labels. During the latter part of the coming spring it will be removed from the Reptile House, where, during the winter, the number of its cages has been much reduced, and replaced in the quarters occupied during the summer of 1910.

DEPARTMENT OF BIRDS

Lee S. Crandall, Acting Curator; Samuel Stacey, Head Keeper.

During the past year, in the absence of the Curator, the efforts of this department have been exerted toward maintaining the collection at the high point of excellence previously attained, and also in striving to advance its standing both in species and in specimens. In all these lines of activity, excellent results have been achieved, and the Acting Curator is entitled to great credit therefor.

The growth of the bird collections during the year is represented by 107 new species and 133 specimens that have been added. With the exception of eight portable cages that were placed in the public space at the west side of the Ostrich House, no new accommodations for birds were provided, the gain in species having been effected chiefly by decreasing the number of specimens of several species and introducing others.

No epidemics have occurred, and the death rate has remained at its customary low point.

A series of wild geese, numbering nineteen species, was arranged in systematic order in the Duck Aviary, and another game-bird series, consisting of eleven species of American quail, was exhibited in the Glass Court of the Large Bird-House, where it has attracted much attention from sportsmen, as well as the general public.

Among the most conspicuous accessions are three greater birds of paradise, (*Paradisaea apoda*), and a pair of secretary birds, (*Serpentarius serpentarius*). Both species were acquired by purchase, and from every point of view are of great interest. The birds of paradise are not at present in possession of the brilliant yellow plumes that are their chief feature of beauty, but these will be developed in due season.

Well worthy of note among the birds new to the collection,

are those sent from Asia by Curator Beebe, including Javan jungle fowl, (*Gallus varius*), hybrid Javan jungle fowl, (*G. varius* x *G. gallus* var. dom.), and Nicobar pigeons, (*Caloenas nicobarica*). The hybrid fowl are very interesting in the possession of a large median throat-wattle, and two rudimentary lateral ones. The collection now contains three of the four known species of jungle fowl—red, (*Gallus gallus*), Sonnerat, (*G. sonnerati*), and Javan, (*G. varius*).

By exchange with the Zoological Society of London, many interesting birds have been received, including the Sonnerat jungle fowl, (*Gallus sonnerati*), paradise sheldrake, (*Casarca variegata*), Schlegel dove, (*Calopelia puella*), and black-tailed gallinule, (*Microtribonyx ventralis*).

Not particularly showy as exhibits, but of surpassing value to the student, are the red-faced and striated colies, (*Colius erythromelom* and *C. striatus*). These are birds of small size and dull coloration, but of remarkable structure and habits. They are able to direct forward either two, three or four toes, at will!

Two handsome species of cranes—the Manchurian, (*Grus japonensis*) and the white-necked, (*Pseudogeranus leucauchen*), were obtained, and an attempt is being made to acclimatize them in the Crane Paddock with the Indian sarus, (*Antigone antigone*), and the whooping crane.

An unusually large series of shore birds collected by members of the department, includes pectoral, (*Pisobia maculata*), semi-palmated, (*Ereunetes pusillus*) and least sandpipers, (*P. minutilla*), killdeer plover, (*Oryzochus vociferus*) and yellow-legs, (*Totanus flavipes*). Hudsonian, (*Numenius hudsonicus*), and European curlew, (*N. arquata*), black-bellied plover, (*Squatarola squatarola*), and American oyster-catcher, (*Haematopus palliatus*), were added by purchase.

Other important additions were, cinnamon, (*Crypturus cinnamomeus*), pileated, (*C. pileatus*) and great tinamou, (*Tinamus major*), pileated herons, (*Plerodius pileatus*), lesser vasa parrot, (*Coracopsis nigra*) and papuan cassowary, (*Casuaris papuanus*). Mr. Kenyon V. Painter presented two white-eyed wood swallows, (*Artamus superciliosus*) and one masked wood swallow, (*A. personatus*), notable as being the only passerine birds that are known to possess powder-down patches.

Observations concerning a number of experiments in color, instituted by the Curator, have been continued during the year, and much data obtained.

The Director takes pleasure in expressing the satisfaction of

the Executive Committee and himself in the standard of excellence that has been maintained throughout the year in the Department of Birds.

CENSUS OF BIRDS LIVING IN THE ZOOLOGICAL PARK,

	January 1, 1911.	Species.	Specimens.
Rheiformes,	Rheas	1	1
Struthioniformes,	Ostriches	2	3
Casuariiformes,	Emeus and Cassowaries.	3	5
Tinamiformes,	Tinamous	5	12
Galliformes,	Quail and Pheasants....	76	169
Columbiformes,	Pigeons and Doves	58	273
Ralliformes,	Coots and Gallinules....	15	39
Lariformes,	Gulls and Terns.....	12	58
Colymbiformes,	Loons	1	1
Charadriiformes,	Plovers and Sandpipers .	19	64
Gruiformes,	Cranes, Seriemas, etc....	15	26
Ardeiformes,	Ibises, Storks and Herons	17	35
Palamedeiformes,	Screamers	2	4
Phoenicopteriformes,	Flamingoes	2	5
Anseriformes,	Swans, Geese and Ducks.	59	565
Cathartidiformes,	New World Vultures....	6	24
Pelecaniformes,	Cormorants and Pelicans	8	18
Accipitriformes,	Hawks and Eagles; Old World Vultures	21	37
Strigiformes,	Owls	16	48
Psittaciformes,	Parrots, Macaws and Cockatoos	71	179
Coraciiformes,	Kingfishers and Hornbills	5	8
Trogoniformes,	Trogons	1	2
Cuculiformes,	Touracos and Cuckoos ..	5	17
Scansores,	Toucans	12	18
Piciformes,	Woodpeckers	6	12
Passeriformes,	Thrushes, Sparrows and all Perching Birds....	334	1,390
Totals		772	3,013
26 Orders.			
Gain over 1909		107	133

DEPARTMENT OF REPTILES

Raymond L. Ditmars, Curator; Charles E. Snyder, Head Keeper.

A successful feature of last year's exhibits was the series of economic reptiles displayed in connection with an elaborate ex-

hibition of representative species of small mammals, chiefly rodents, destructive to agriculture. In this series were shown the larger species of North American serpents whose feeding habits make them of value to the agriculturist. This series is to be changed in the spring of 1911 to the useful reptiles of Europe.

For some years the Reptile House cages have been filled to their utmost capacity. To arrange the economic exhibit it was necessary to attach shelves underneath the long iron tables in the south portion of the main hall. Special cages were constructed to fit these shelves, with the result that we were enabled to add thirty-two additional exhibition compartments for serpents. This relieved some congestion, and rendered it possible to give individual care to a certain number of species. The collection of rodents included in this exhibition is steadily increasing and may now be rated of some importance. It is described in the Mammal Department section of this report.

The general collection of reptiles has remained uniformly strong and interesting. Among the more important purchases the following are worthy of mention:

Chelonians.—A series of Malayan fresh-water turtles; elephant tortoise from the Aldabra Islands; seven star tortoises, from India; four radiated tortoises, from Madagascar and two Berlandier desert tortoises, from Texas.

Crocodylians.—A broad-nosed crocodile, from Africa; a Nile crocodile; three South American caimans.

Lizards.—A series of the lizards of Europe; desert lizards, from Arizona and New Mexico; eight South American tegus; two giant cyclodes, from Australia; three African spiny lizards; Nile monitor and two Egyptian monitors.

Serpents.—One South American bushmaster; one Malayan green tree viper; eleven Indian rat snakes; one Indian tree snake; four long-nosed tree snakes, from Borneo; one Australian diamond snake; one Australian carpet snake.

Amphibians.—Thirty-three Surinam toads; a representative series of frogs, toads and salamanders of Europe; two specimens of the blind *Proteus* from the Adelsberg Cave in Austria.

Among the important donations of the past year were seven Indian cobras, the gift of William H. Barbour.

Of important events in the department, one of the most interesting was the birth of seventeen Malayan tree vipers. These leaf-green reptiles, with heart-shaped head and prehensile tail, have been exhibited with the mother in a special cage with descriptive label, and have attracted much attention.



LAKE AGASSIZ, ZOOLOGICAL PARK.

The most important loss that occurred during the year was our oldest specimen of the king cobra which was purchased in 1899, immediately after the Reptile House was ready to receive the collection. The snake died of a glandular disease that was detected four years ago. We had several times taken this dangerous serpent from the cage and removed swollen glands from the throat. The reptile's death was caused by the suppuration of a gland too deep-seated for treatment. Fortunately, we have a fine substitute for the big cobra, and this specimen—now about ten feet long—occupies the cage of the original feature of our series of poisonous serpents.

The collection of local reptiles was greatly strengthened by a collecting trip made by the Curator during the past summer. Two weeks' work in the mountains of Sullivan County resulted in the capture of about three hundred snakes. Ten species were represented in the series. By this expedition twenty-four rattlesnakes were added to the collection.

Continuing his observations on the occurrence of poisonous snakes in the eastern states, the curator and his assistant, Charles Snyder, investigated several of the mountains in the Berkshire region and noted numerous ledges where rattlesnakes were abundant. This work is being carried on with a view to the publication of a map showing localities where dangerous reptiles are frequently encountered, and the many and extensive areas in which they are seldom or never found. Frequent queries on this subject show it to be well worth investigation and report.

The census for the year is as follows:

	Species.	Specimens.
Chelonia	39	362
Crocodylia	6	41
Lacertilia	30	249
Ophidia	54	363
Amphibians	19	320
Total	148	1,335

SUMMARY OF COLLECTIONS

	Species.	Specimens.
Mammals	240	815
Birds	772	3,013
Reptiles and Amphibians.....	148	1,335
Total	1,160	5,163
Increase over 1909	44	163

GROUND IMPROVEMENTS AND MAINTENANCE WORK OF THE DEPARTMENT OF CONSTRUCTION AND FORESTRY

Herman W. Merkel, Chief Constructor and Forester.

The most important work of our own ground improvement force for the year 1910 was the removal of the old Moose House and the building of the yards and fences for the new Wild Horse installation. Corral fences to the extent of 600 lineal feet were erected on T-iron posts set in concrete. About 5,280 square feet of tar-macadam paving was put down along the corral fences, and surrounding the buildings. The old shelter house that formerly stood in the Moose Range was carefully taken down, and re-erected as a shelter house for wild horses. On account of the re-arrangement of the interior, the great number of new doors and windows considered necessary, and because the building originally stood on sloping ground, while it now stands on a level foundation, much more work was necessary than at first had been anticipated. On account of the unsettled condition of the plans for the Zebra House, the fences of the corrals facing this building have not been erected. The total cost of our work on this installation was \$3,018.32; and everything is now in a good state of preparation for the erection of the Zebra House, and its yards.

Around the new Comfort Station, on the Elephant Walk, about 600 yards of soil were used in regrading the surface. Two new walks and a new pipe-line were built and the building planted out with evergreens, mostly hemlock, taken from our border plantation. The cost of this work amounted to \$1,863.

The macadam paving of the yards east of the Small-Deer House had been so badly loosened by the hoofs of the animals that the yards presented a very untidy appearance, the loose stone was hard on the animals' feet and the yards could not be cleaned satisfactorily. It became absolutely necessary to cover those yards with concrete, of which 14,000 square feet were put down, at a total cost of \$515. The yards west of the building, that were paved with tar-macadam at the time of the construction of the building, are in a very satisfactory condition, and will remain so for many years.

At the Boat-House a storm-door portico was erected in front of the main entrance, to serve as a protection both to the building and its patrons.

The unexpected gift of two polar bears by Mr. Paul Rainey necessitated the erection of a new and very strong bear den,

which could be cleaned from without. A cage to meet the most urgent requirements was hurriedly planned by the Director and Chief Constructor, and erected in two weeks' time by our ground improvement force, under the direction of Mr. de Wellworth. Although small, this cage is not bad looking, it is very strong and well suited to its purpose, and its cost was only \$547.01.

The important space on Baird Court north and east of the Primate House that never before had been properly graded and paved, was surfaced with tar-macadam at a cost of about \$100.

The grass plot surrounding the Administration Building was covered with soil, graded and seeded. As soon as the contract work for the surrounding coping was completed, the iron fence bought last year for the front of this plot was erected thereon. The planting of evergreens north and south of the new building was completed early in the spring. In the basement store-rooms of the building many small improvements in the line of additional painting and carpentry work were made.

Outside of the work done at the Administration Building and new Comfort Station, the planting consisted mostly of additional shade trees; though some small additions were made to the rhododendrons in Beaver Valley and to the planting surrounding the Concourse. This, with the exception of the usual number of small miscellaneous ground improvement items, such as the erection of guard rails and fences, the building of various small cages and a shelter house in the White-Tailed Deer corral, completes the record of ground improvement work for the year.

MAINTENANCE AND REPAIRS

The amount of work necessary to maintain in good condition the great number of animal installations and buildings, as well as in distributing food supplies, cleaning and policing the grounds, pruning and spraying trees, and maintaining lawns and flower-beds, at times threatened to swamp the maintenance force. When it became necessary, on account of the great drought of the past summer, to run a number of additional water-pipes, and do a great deal of watering, the extra burden was severely felt.

Another unusual tax on the maintenance force was caused by the stoppage of the main sewer from the Elephant House, eastward of the Elephant Walk. This sewer was so completely clogged that the cellars of the Lion House and Elephant House were badly flooded. It became necessary, not only to pump out those buildings, but also to dig down to a sewer 18 feet below the surface of the ground, remove the obstructing materials, and re-

place nearly a hundred feet of very poorly-laid pipe. This work was carried on under high pressure, almost continuously day and night, until finished.

The struggle to maintain cleanliness and orderly conduct among visitors has been long and continuous, as has also been the fight against forest fires. Only seven arrests were made during the year by Special Patrolman Van Benschoten, but it is gratifying to report that in every case a conviction was obtained.

In the repairs and replacement of cage work it has been our constant aim to eliminate as far as possible the necessity for further repairs by the substitution of concrete for wood, and by the installation of stronger cage work.

The condition of the various heating plants necessitated a vast amount of repair work, a list of which is included herewith, in order that the seriousness of this feature of our annual work may be appreciated. Because of the law that does not permit us to select for any new building the furnace that we most desire, we now find ourselves obliged to keep in repair *nine* different kinds of furnaces! The burden upon us is obvious.

The completion of the new Comfort Station enabled us to do away with four old toilet buildings. Two of these were used for deer shelters, one for the storage of feed and the fourth was moved to the Nursery.

At the Nursery, the usual work of cremating garbage and refuse, raising and caring for ornamental plants, live stock and vegetables was carried on.

The Soda Stand in front of the Bear Dens was moved to its new situation, and a large wooden platform built around it. The walk leading to its former site was removed, and a new one built. The cost of this work, which was met by the privilege fund, amounted to \$351.88.

The Rockefeller Fountain, the moving of which was done by contract, was transferred to its permanent position in the centre of the Concourse. The work of moving, the building of drains and water connections, and the grading of the ground immediately surrounding the fountain was under the direction of this Department.

After the fountain had been moved, it was thoroughly waterproofed by the Caffall process; and through this and other measures we believe that the fountain is now, for the first time in its history, in a really adequate state of mechanical perfection, and of preservation against the ravages of time and the elements.

REPAIRS UPON VARIOUS BUILDINGS

We present herewith a list of the important repairs that were made during the year to our permanent plant. In considering it, it is well to bear in mind that in the planning and construction of our improvements, we have from the first endeavored to make them as permanent as possible in order that the cost of repairs and maintenance might be reduced to its lowest terms.

The schedule, in brief, is as follows:

- The "violations" due to faulty wiring in every building supplied with electric current throughout the entire Park, were corrected.
- The Boston Road Comfort Station claimed a great deal of labor through the insufficient water supply and faulty plumbing.
- All the entrances received their usual painting, as well as extensive repairs to their roofs.
- The Ostrich House was painted and varnished inside and out, and some improvements were made to cage work.
- The Small-Deer House and yards were painted, the heating system improved, and considerable repair work was done by the blacksmith and wire workers.
- The fences of the Elk Range required considerable painting and repairing.
- The Elephant House and yards were painted, and extensive repair work was done by the blacksmith and wire workers on doors damaged by elephants.
- The Wolf and Fox Dens were painted, and the iron work strengthened.
- The Bear Dens were painted; several of the cage floors were renewed; and heavy mesh wire-cloth was wired to the partitions to prevent the animals from injuring one another.
- The fence around the Sea-Lion Pool was painted.
- The Wild Fowl Pond fence, the Burrowing Rodent Enclosure, the Pheasant Aviary, and several Small-Deer corrals were painted throughout.
- The bottom of the Alligator Pool was concreted, and the fence surrounding the pool was painted.
- Extensive repairs were made to several cages in the Reptile House, and fifty new cases were constructed for the Rodent and the Insect Collections.



HIPPOPOTAMUS.

The roofs of the Reptile House, Large Bird-House, Small-Deer House, Antelope House, Lion House and Aquatic Bird House leaked badly, requiring extensive repairs.

Three boilers at the Large Bird-House were taken down, reset and three new sections supplied.

Two boilers at the Reptile House were taken down and reset.

Three boilers at the Small-Deer House were taken down and reset in a new position in a larger pit. A new section and a header were supplied.

One boiler at the Antelope House was taken down and reset.

One boiler at the Service Building was taken down and reset, and one new section put in.

A new section was furnished for the boiler of the Rocking-Stone Restaurant.

A hot water boiler was transferred from the West Farms Comfort Station to the Aquatic Bird House.

A new circulating pipe was installed on the hot water boiler at the Reptile House.

The small steam boiler at the Boat House was repiped with brass pipe, and later an entirely new boiler was installed.

NURSERY PRODUCTS FOR 1910, USED FOR MAINTENANCE.

20,132	Plants.	49	Barrels Potatoes.
219	Fowls.	21	Tons of Mangels.
148	Broilers.	5,000	Roots Celery.
2,322	Chickens.	2,259	Ears Corn.
200	Pigeons and Squabs.	592	Bushels Carrots.
3	Guinea Fowls.	970	Bushels Beets.
1,921	Rabbits.	6,809	Heads Lettuce.
1,377	Guinea Pigs.	2,000	Heads Cabbage.
1,298	Rats.	6	Bushels Turnips.
666	Mice.	274	Pounds Grapes.
29	Pigs.	136	Quarts Strawberries.
16,436	Eggs.	20	Pints Raspberries.
36	Pounds Honey.	170	Quarts Chickweed.
30,000	Mealworms.	42	Bushels Tomatoes.
	$\frac{1}{2}$ Ton of Browse.		

DEPARTMENT OF ADMINISTRATION

H. R. Mitchell, Chief Clerk and Manager; William Mitchell, Cashier.

For several years this department has been greatly in need of additional office room. The rooms originally assigned for the use of the Chief Clerk and his office force had become entirely inadequate. When the Director moved to the new Administration Building, late in the year, his previous quarters became available for the use of this department. Advantage was taken of the opportunity to have the entire office re-arranged. One of the new rooms has been fitted up for the use of cashiers and gate-men in making their daily reports and settlements. Heretofore there has been no place available for this purpose except the small, cramped lobby in the general office. With the additional room now available for this department, all its office work will be greatly facilitated.

Privileges.—The Hudson-Fulton Celebration, during the fall of 1909, brought thousands of strangers to the city, many of whom visited the Park during their stay, and thereby materially increased the privilege business of that year.

Notwithstanding a falling off of about 173,000 in visitors at the Park during 1910, as compared with the previous year, we were able to show a considerable increase in net profits from privileges. This result was secured only by the strictest care, and many new economies in all branches of operation and production.

Our transportation equipment for the distribution of privilege supplies, and for the general work of the department, had become so seriously inadequate that it was necessary to improve it, early in the year, by the purchase of a one-ton electric automobile truck. Even with this addition, the service was taxed to its utmost during the summer season. Another automobile, either electric or gasoline, will undoubtedly have to be added in the spring of 1911.

An impression of the rapid growth of the privilege business may be gained from the fact that about seven years ago the entire service of the department was handled with one two-wheeled push-cart.

The following table, showing the annual increase in the net profits in privileges for the past five seasons, will further serve to demonstrate the rapidity of their growth and development.

PERCENTAGE INCREASES IN PROFITS OF PRIVILEGES,
FROM 1906 TO 1910.

- 26% increase in 1906 over previous year.
- 19% increase in 1907 over previous year.
- ¼% decrease in 1908 from previous year.
- 8% increase in 1909 over previous year.
- 19% increase in 1910 over previous year.

Auditing of Privilege Accounts.—The accounts of the Privilege Department having grown to such proportions, it was thought wise by the Executive Committee to arrange for their auditing, and the Audit Company of New York was engaged for the work. The accounts were carefully checked for a period of seventeen months prior to August 1, 1910, and found to be in a satisfactory condition.

The system of reports and accounting now in use was devised by the Chief Clerk and his assistant when the development of the privileges began. From time to time it has been revised and extended to meet the demands of the business. It is entirely practical, and is as complete as is consistent with the very small accounting and office expense. Certain changes that were suggested have been made.

Soda Water.—The arrangements for tables and chairs for parties at the various soda stands last season, were continued and increased to keep pace with the demand. Ice cream cones were added to the usual soda service. They proved extremely popular with the children and as they have no wrappers or refuse to be thrown on the walks, their sale was encouraged until it reached large proportions. Special care was taken to secure cones complying with the pure food laws, without regard to their cost. Arrangements have been made to make our own cones next season so as to insure their being served fresh.

The Soda Pavilion near the Bird House was again kept open during the winter months, and the service extended to include sandwiches. Tables and chairs, with muslin curtains at the windows, made the pavilion attractive. In seasonable weather, a good business was done, without interfering with the restaurants.

Removal of Soda Stand Near Bear Dens.—Owing to the location of the new series of Bear Dens along the rock ledge northwest of and parallel to the present dens, it was necessary to remove the soda stand that for several years had occupied that location. A new site was chosen a short distance south of the old

one, and much nearer the line of traffic between the Bear Dens and the Reptile House. In order that the business of the stand should not be disturbed during the summer, the work of removal was accomplished before the season opened.

Lunch Pavilion.—The provisions made in 1909 for the accommodation of lunch and basket parties in the Shelter Pavilion near the Fox Dens were continued and enlarged this season. By the addition of more tables and the introduction of a gas line to supply heat for the coffee urns, the whole service was put on a better basis. It was found that there was great demand for sandwiches, and arrangements were made to supply it. Inasmuch as the narrow space across one end of the pavilion, previously occupied by the soda stand and cashier's booth, was insufficient to give the additional room required, a cashier's booth was built in the centre of the pavilion. This gave excellent space for displaying postals, souvenir books and other publications, and the result was a large increase in the sale of those articles.

Rocking-Stone Restaurant.—Unfortunately, funds have not been available for the much-needed extension to the main dining-room of the Rocking-Stone Restaurant, referred to in last year's report, and we have been obliged to go through another season without the satisfaction of being able at all times to take care of our patrons. It is, however, very important that this extension should be made at the earliest possible moment.

In all other respects the season has been a satisfactory one for the restaurant, and it shows a consistent gain over previous years, in the volume of business and net profits. We have been fortunate in retaining practically the same force of employees for several years,—an important factor in the success of any restaurant.

Our plan of sending our own wagon to market for fruits and vegetables as often as is necessary, which was started several years ago, is a continued success. In this way both of our restaurants are supplied with the highest grade of produce the market affords. By special arrangement, our supply of butter comes directly from one of the best creameries in northern New York, and our eggs come from a Connecticut farm.

Boat-House Restaurant.—During the past year the patronage of the Boat-House Restaurant has made a very encouraging gain, sufficiently so to assure us of its popularity with its regular patrons, and its growing reputation with the public generally.

Early in the season, arrangements were made to serve a *table d'hôte* dinner on Sundays and holiday evenings, the object being to make the Boat-House known to a large number of Park visitors. The plan was an immediate success, and in a short time our facilities were taxed to their utmost during the dinner hour. This plan will no doubt be continued during 1911 as it has already brought the restaurant many friends.

Boating.—The boating was greatly hampered during the last season by the extremely low water in the Bronx River and Lake. The old dam at 182nd Street, which forms the lake, had been leaking badly for some years, and during the dry months of summer, with but little water coming into the lake, it was impossible to keep the water up to the required level. This made it very difficult to unload passengers from row boats, which at the lowest water level were two feet below the dock.

There were also so many stumps and sunken logs in the lake channel that it became dangerous to operate the launches when the water was below the level of the dam. On one occasion, at a time of the low water, when the launch Albatross was loaded with visitors, it struck one of these logs, which opened a hole sufficiently large to swamp the boat before the Bronxdale landing could be reached. Fortunately the pilot was able to beach the boat on some rocks before she sank, and her sixteen passengers landed without injury. As a result of this accident, plans were made and a contract let for extensive repairs to the dam and raceway that will make it possible to hold the lake at the normal level at all times. This work was undertaken as soon as the boating season was over, and is now completed. Advantage has been taken of the opportunity offered while the lake was drained for this work, to cut off and remove as many of the sunken logs and stumps as could be reached. We therefore believe that our troubles with low water in Bronx Lake are now over.

Guide Books.—Although the Bison Edition of the *Guide Book*, of which 30,000 copies were printed late in the fall of 1909, is still on sale, the work of getting out another edition must be taken up soon, because a new edition will be required in the spring of 1911. It really is remarkable how well the *Guide* continues to sell. It would seem that eventually our regular visitors would be fully supplied with copies, and sales would diminish accordingly; but such is not the case. In fact, many regular visitors who come to the Park carrying previous editions, will purchase other copies as soon as a new edition is available.

Souvenir Books and Postals.—The price of the new colored edition of the Souvenir book was reduced from fifty to twenty-five cents during the season, on account of the old issue of twenty-five-cent books having been exhausted. This change in price greatly increased the sales during the latter part of the season, but we now find ourselves without either of the more costly editions, for both of which there is some demand. The issuing of a limited edition of each series is now being considered. The last issue of 320,000 souvenir postals is disappearing rapidly, and arrangements are now under way for a new and much larger supply. In all probability the number of subjects will be doubled, and the number printed increased to more than a million.

Riding Animals.—With the children the riding animals are as popular as ever. Some improvements have been made; and two Shetland colts were added to the collection last season by birth. They were kept in a small, temporary corral at the stand, much to the amusement and delight of the children.

Band Concerts.—The practice of giving band concerts in the Park during the summer, which was established last season, was continued again this year. Our request for a modest sum from the city for this purpose not having been granted, it was again necessary to put the expense on the Privilege Account.

An attempt was made to give daily concerts, and the arrangement was continued for a month, but the funds that could be used for the purpose were so limited that a band of proper size could not be engaged, and daily concerts were given up. Sunday concerts, however, were continued throughout the season. Renewed application was made to the Board of Estimate with our request for maintenance of the Park for 1911, for a sum for band concerts, but the item was not allowed. The budget for the maintenance of other parks in the Bronx carried an item of \$12,000 for band concerts, but, notwithstanding the fact that attendance at the Zoological Park seems to be in excess of that of any other park in the Bronx, we do not seem to share the benefits of the music appropriation.

Gate Receipts.—An annual increase in receipts at the entrance on pay days has become the rule. The year just closed was no exception, showing a substantial gain over 1909. Many visitors now come by preference to the Park on pay days, to avoid the crowds, and see the collections to better advantage.

Bureau of Information.—During the year it was decided to use the alcove in the Lion House for the opening of a bureau of

information. The alcove was suitably furnished, and a number of attractive enlargements and transparencies from our collection of animal photographs were displayed. The bureau opened in May, with Miss Newman in charge, and it has proved an entire success. In addition to filling the need of a place conveniently and centrally located, where visitors could make inquiries about the Park and the Zoological Society, it furnishes an opportunity for a display of our various publications. Sales at this bureau since its opening have been sufficient to justify its existence, and assure its permanency.

Refrigerator Plant, Laundry and Ice Factory.—Unfortunately for this department, funds for the construction and equipment of this improvement, tentative plans for which have long been prepared, have not become available. It is hoped, however, that the way will open for this greatly-needed building before the close of 1911. Early in 1910 it became impossible longer to handle the work of our laundry without some adequate machinery, and it was decided to purchase from privilege funds what we needed, and instal it temporarily in the present laundry in the Rocking-Stone Restaurant, with a view to removing it to the permanent building when constructed. This was done, and very materially increased the quality and quantity of our laundry work.

DEPARTMENT OF PUBLICATIONS AND PHOTOGRAPHY

Elwin R. Sanborn, Editor and Photographer.

The Bulletin.—No special publications were printed in 1910, but the *Bulletin* was changed from a quarterly to a bi-monthly, and issued regularly. Two of the numbers, for March and November, were devoted to the work of the Aquarium, and the others to the Park. The added numbers have served a useful purpose, inasmuch as the members of the Society do not now lose sight of the last issue before the following number is printed. The contributors recognize more vividly the responsibility of furnishing their material promptly, and the pressure of work is rendered more uniform and constant.

Annual Report.—The 14th Annual Report appears in a new face of type, the Century Expanded Series—set from matrices owned by the Society. The form of the type was changed, making it more suitable for the reproduction of full-page illustrations. The original of this type was designed for the Century



GREAT GRAY KANGAROO.

Magazine, and the Expanded Series is a modification of it. It is pronounced by competent authorities to be one of the most perfect printing types ever designed. The possession of the matrices will enable us to always produce clean, fine impressions, and to maintain the high standard of excellence for which the Report is known.

Guide Book.—The last edition of the *Guide Book* is nearly exhausted, and it will be necessary to revise and reprint it before the end of 1911. Up to this time the *Guide* has run through ten editions, with total sales of 118,000 copies.

Publicity.—The campaign for members has been continued through the medium of printed folders, and the responses to those mailed during the past year have been gratifying. These circulars reach the better classes of citizens of New York, and if the result should not yield a member for each invitation, they serve the purpose of keeping the objects of the Society continuously before the public.

The C. P. Goerz Optical Company bought 110 enlargements, made from the Society's negatives, which they exhibited in several western cities. The pictures were 20x24 inches in size, and suitably framed. It is the purpose of the Goerz Company to display these pictures throughout the United States and Canada wherever their lenses are sold. As each picture bears the Society's copyright notice, prominently lettered, they call attention to the value of a zoological park as an educational institution. A series of the pictures referred to is now on exhibition at one of the large department stores in New York.

Photography.—Fourteen new reference albums were made, and all new pictures labelled and numbered, making the entire series of Park negatives complete up to date. Over 2,000 pictures were mounted, and a title was set in a hand stamp and printed under each. The index-record for our cabinets of electrotypes have also been entirely remade and completed to date, and a proof of very half-tone and line cut used in the publications of the Society has its proper entry. These have all been labelled so as to give a complete record of the uses of each cut, and the negative from which it was made.

A series of special illustrations was made for a book published by the Stokes Company.

The following is a list of photographic prints made during the year:

For Park Albums	2,100
For use in Society Publications.....	653
For Advertising and Special Purposes.....	950
For Files	720
Total	<hr/> 4,423

CONTRACT WORK IN GROUND IMPROVEMENTS

Conducted under the direction of the Park Department of the Borough of the Bronx, Martin Schenck, Chief Engineer.

Administration Building.—This structure was completed in the spring of 1910, but owing to the time required for the manufacture of its furniture and rugs, it was not ready for occupancy until November 20. On that date, however, it was opened to the uses for which it had been designed, with a minimum number of attendants and care-takers. The Heads and Horns Collection thereupon became accessible to all persons entitled to the use of the Administration Building.

The Director occupied his new offices in the Administration Building on November 15, 1910, thereby affording the Chief Clerk the additional office room for which his department had long stood in urgent need. A code of rules for the use of the new building was prepared by the Director, and approved by the Executive Committee. Inasmuch as it is a physical impossibility to permit 1,600,000 annual visitors to have free access to a small office building, it was arranged that admission to the new building should be by card only. At the same time, the millions desire to see the National Collection of Heads and Horns, and the Zoological Society is not only willing, but anxious that they should do so. In view of this fact, and the additional fact that the two picture galleries in the new building are now filled full to overflowing with the heads and horns, many persons have suggested the obvious alternative that a separate building should be erected for the Heads and Horns Collection, to which all visitors could have free access every day in the year. The importance of the collection, its educational value, its phenomenal growth and the legitimate desire of the public to see it, all point to the only solution that seems possible—a special building on Baird Court for the Heads and Horns. The removal of the Rockefeller Fountain

to a better location has left between the Primate House and the new building a building site which would serve such a purpose as that foreshadowed by the logic of existing conditions.

The Furnishing of the Administration Building.—After long and careful deliberation, the Executive Committee caused plans and specifications to be prepared for the furniture, rugs and hangings that were required to furnish the new building. On those plans, a contract was regularly advertised, and at a public letting was awarded to Abraham & Straus, of Brooklyn, as the lowest bidder, at \$7,544.26. The work was very promptly taken in hand, and prosecuted with the utmost regard to the views and wishes of the Society. All the work and materials called for were furnished in a manner highly satisfactory to the Society, and the contract was completed within its time limit. The new building is plainly but substantially furnished, and its equipment has been chosen with a view to long wear with a minimum of deterioration.

Repairing Bronx River Dam, at the Boat-House.—Through deteriorations due to old age, the dam at the Boat-House across the course of the Bronx River, which forms Bronx Lake, became so full of fissures that the leakage of water became very serious. In dry seasons, it was impossible to maintain a water-level in the lake that was adequate for our boating business. In addition to that, grave fears were entertained that the dam might entirely give way, and cause a calamitous loss of life and property below it.

It was decided that immediate repairs to the dam, of a very comprehensive nature, were quite imperative. Accordingly, a request was made to the Commissioner of Parks, Mr. Thomas J. Higgins, that plans be prepared by his Chief Engineer, and a contract let for the work required, with all possible despatch. This request was granted, and immediately Chief Engineer Schenck prepared a plan for a very substantial concrete facing for the entire dam, set against the old structure, and faced on the outside with rustic stone, so laid as to make a picturesque cascade instead of the old-fashioned smooth-fronted waterfall. The plan provided for a thirty-six-inch waste way, and a valve to match, by which the lake can easily be drained off whenever necessary.

A contract for the very considerable construction work required was awarded to Henry E. Fox, at \$6,514. The work was

promptly undertaken, and finished in December, to the satisfaction of all parties concerned. While the lake was empty our maintenance force took advantage of the opportunity to remove the sunken logs and stumps that long had interfered with the use of our electric launches.

Central Public Comfort Station.—The Public Comfort Station erected just off the Elephant Walk, almost in the geographical center of our enclosed grounds, was completed by the H. F. English Building and Construction Company, at a cost of \$10,357, and opened to the public on April 1. This very satisfactory improvement enabled us to remove the temporary wooden structures that for ten years had intruded upon the grounds surrounding the Elephant House, which was quickly done. With the erection of this station the Zoological Park is at last fairly equipped with comfort stations of a becoming and thoroughly sanitary character.

DEPARTMENT OF ENGINEERING

George M. Beerbower, Civil Engineer.

The most important single service performed by our Civil Engineer during 1910 was the preparation of a complete series of working plans and specifications for the Eagle and Vulture Aviary and the shelter house to connect with it. An effort was made to produce an amply large, handsome and thoroughly modern structure for exhibition purposes, and at the same time provide for its tropical habitants a good shelter-house wherein they can comfortably be housed in midwinter. These plans were prepared with such constant regard to legitimate economy that both structures will be erected for \$18,867, which is \$1,133 under the estimated cost.

The Eagle Aviary will occupy practically the whole of the open hill-side space immediately south of the Aquatic Bird House and new Soda Pavilion. It will face the southeast, with a frontage of 210 feet. It will contain five very large flight cages for eagles, condors and other large vultures, and six smaller cages, for smaller species. The height of the largest cage will be thirty feet, and its floor dimensions will be 24x33 feet. Along the rear there will be a suitable storm shelter for each cage, built of concrete, on a new plan. The shelter house will be built of brick, and will stand in the rear of the aviary itself, by which it will be partly hidden. While the contents of that building will not be regularly on exhibition to the general public,—and in summer

will be empty—it will at all times be open to all ornithologists and bird-lovers who are interested in the birds of prey.

FUTURE IMPROVEMENTS

Eagle and Vulture Aviary.—For several years our really large and fine collection of eagles and vultures has been suffering for an adequate and thoroughly modern aviary, without which no large vivarium can be regarded as completely equipped. At present the large birds of prey are scattered all over the Park, and the raptorial collection has no separate identity whatever.

Mr. Beerbower spent some months in the preparation of plans and specifications for the Aviary desired, and a brick building back of it for use as a winter shelter for tropical species. A contract for the work was finally awarded to George Hildebrand, for \$18,867. Work began on February 15, 1911, and it is hoped that the Aviary itself will be completed by midsummer.

Additional Bear Dens.—The possession of *seven* of the great Alaska brown bears, and the legitimate growth of the general collection of bears, rendered it imperatively necessary to provide without delay a series of additional dens. This necessity afforded a long-desired opportunity to provide some smaller dens than any of those now in use, for single specimens of small species that do not thrive in large dens with several companions. Accordingly, Mr. Beerbower prepared plans for a series of eight small dens, and two large ones for bears of the largest size. The site chosen is the hill-side directly opposite the main range of Bear Dens, including the spot where a soda pavilion originally stood.

A contract for these new Bear Dens was awarded to the J. W. Fiske Iron Works, for \$7,700, and work is now progressing. These dens, when completed, will permit us to assemble in that locality all the bears that now are exhibited in the Small-Mammal House and in other places where bears do not belong.

We are greatly indebted to Park Commissioner Higgins and his Chief Engineer, Mr. Martin Schenck, for the promptness and energy with which they have taken up and pushed forward every Zoological Park matter that has required their co-operation.

Respectfully submitted,

WILLIAM T. HORNADAY,
Director.

January 1, 1911.



CHIMPANZEE, BALDY.

REPORT OF THE
VETERINARIAN AND PATHOLOGIST
W. REID BLAIR, D.V.S.

WHILE fortunate during the past year, in that no epidemic of infectious or contagious disease has occurred among our animals, we have, however, lost a number of valuable specimens from rather unusual disorders. Among these were the young African rhinoceros; the male Bengal tiger; a Rocky Mountain goat and the kiang.

During the past year there has been the usual number of interesting medical and surgical cases: an orang-utan with a compound fracture near the head of the right femur; a musk-ox calf with an infected wound and necrosis of the spines of the sacral vertebrae and hip bone, resulting from injuries received from Eskimo dogs at the time the animal was captured by the Rainey expedition; a female African elephant with severe keratitis of the left eye, caused by injury from the tusk of the male elephant Kartoum; chimpanzee with broncho-pneumonia; caracal lynx with distemper, and a clouded leopard with pneumonia.

Distemper.—Distemper is a highly contagious, febrile disease, tending to spread rapidly and to produce degenerative changes in the lungs, intestines, kidneys and nervous system.

Animals Susceptible.—Wolves, foxes, coyotes, Eskimo dogs, squirrels, dingos, Cape hunting dogs, ocelots, lynxes, monkeys.

Symptoms.—In the great majority of cases observed by us, one of the earliest and most constant symptoms is conjunctival congestion—swollen eyelids and red mucosa—with weeping. Within twenty-four to forty-eight hours the watery tears become muco-perulent, matting together the lashes and eyelids. Vomiting is usually marked at the beginning of the attack. Thirst and refusal of all food, also, are prominent symptoms. Diarrhea occurs early, and the fecal discharges, at first black and pasty, soon become mixed with mucus and blood. The abdomen is tense and contracted, and weakness and prostration follow rapidly. At times the attack is so sudden and prostrat-

ing that the animal never rallies. These cases generally show marked nervous symptoms from the beginning. The animal is very restless, frequently getting up and moving about, twitching the muscles of the face and limbs, and rolling the eyes. Epileptic attacks appear in the early stages of the disease. These spasms follow each other in rapid succession. Tonic spasms, affecting the muscles of the neck, cause the head to be turned rigidly to one side; and involuntary movements of the limbs are seen when the animal is lying. In the nervous form death usually takes place on the second or third day after the first symptoms are noted. The skin eruptions that occur in such a large proportion of cases of distemper among domestic animals, have rarely been observed by me among our wild animals. Paralysis of the hind limbs may occur early, but more frequently after the acute symptoms have subsided.

Treatment.—Distemper is a highly contagious disorder, and medical treatment is often very unsatisfactory. There is no specific remedy known at the present time. The method that we endeavor to follow in regard to this disease is, to closely inspect and quarantine susceptible animals when they first reach the Park, and to immediately isolate such animals upon the first suspicious symptoms of the malady. Unless the animal is valuable, it has always seemed best to destroy it at once and thoroughly disinfect the cage in which it has been confined. Owing to the large numbers of animals in zoological collections that are directly susceptible to the contagion of distemper, no precautions, however stringent, would be unjustifiable. One may feel reasonably safe from an epidemic of distemper, only so long as such measures are strictly enforced.

Such cases of valuable animals suffering with distemper, as are desirable to treat, should be handled with the utmost care to prevent the spreading of the disease.

In cases where the appetite is not entirely lacking, and in which we succeed in administering medicines, treatment is successful; recovery taking place in about two to three weeks. Eskimo dogs, foxes, Azara dog, dingo, caracal lynx, coati mundis, opossums and raccoon dogs have all been successfully treated.

The patient, of course, should be isolated from all companions; if possible in a separate building with concrete floor. It should be rendered comfortable and especially guarded against cold. This is of vital importance, as any sort of chill is apt to aggravate symptoms and set up complications.

As there is great tendency to wasting and weakness, nothing can be of greater importance than that every means should be taken to feed and maintain the strength of the patient.

At the outset a laxative should be given; we have found that powdered sulphur will be readily taken when other laxatives are refused. One to two teaspoonsful in milk may be conveniently given to the larger animals, and this has a very beneficial effect; removing undigested food and other intestinal toxic matters that are the causes of the diarrhea so frequently associated with distemper. Euquinine (tasteless quinine) in doses of three to ten grains should be administered at the outset in milk.

Food, consisting of milk, raw eggs and brandy, should be given as often as the animal will partake of it. If the diarrhea is troublesome, subnitrate of bismuth in the whites of eggs, or Xeroform in five-grain doses is an exceedingly valuable intestinal antiseptic.

During 1909, and particularly 1910, considerable work was carried on with distemper, especially in protective inoculation with vaccines. No cases of distemper have occurred in foxes that were treated with vaccine and afterward exposed to infection. In the animals treated with the distemper vaccines, good results have been obtained. All these cases have been greatly benefited after the second injection and have made quicker recoveries than with any other treatment. Further work along this line is now being carried out.

The walls and floors of cages in which distemper cases have been confined should be washed and scrubbed in the ordinary way and afterward washed with a strong solution of creolin, or other equally reliable disinfectant. All feeding and drinking vessels that have been near distemper patients must be equally well disinfected. Animals should not be allowed to mingle with others, however well they may seem, so long as they show any discharge from the nostrils or eyes. Animals that have recovered should not be again exhibited with others, until at least ten weeks have elapsed.

Rheumatism.—This is quite a common affection among wild animals in close confinement. Treatment of this disorder has been most successful in the following animals: baboon, elephant, Altai wapiti, Baker roan antelope, rhinoceros, lion, tiger and bear.

Rheumatism is a constitutional, inflammatory affection; probably toxic; tending to localization in the joints, muscles and tendons, with a marked tendency to shift from place to place.

The association of rheumatism with cold and dampness has always been so notorious that no argument is needed to emphasize that fact. It is pre-eminently a disease of cold climates, and especially along the Atlantic slope. Animals that are kept in cold, damp, sunless buildings, suffer most. A sudden change of weather, to cold and wet, is the signal for aggravation of the existing disease. While cold and dampness are potent factors in precipitating or aggravating an attack, these must not be looked upon as the sole or essential causes of rheumatism. The numerous theories, such as the excess of lactic acid, neuropathic, infective, etc., each have their staunch supporters.

Symptoms.—The attack is usually sudden and marked by a slight chill, shivering and lameness. Of the joints affected, the knee is most frequently attacked; the hock and ankles next in order. The tendons and their synovial sheaths are very often implicated. A joint that is weak by reason of previous injury or disease is especially liable to suffer. The affected joint is usually swollen, hot and tender; the sensitiveness being as a rule greatest when there is pressure upon the capsular ligament. In some cases, however, the swelling may be entirely absent, and the trouble is then located only by the evidence of pain during motion.

In one case of a Baker roan antelope, the left knee has frequently been the site of rheumatic attacks. This animal would walk on three legs, or upon four with great stiffness, avoiding as far as possible all flexion of the joint. The joint was always much swollen. During these attacks the animal would lie most of the time, but, if compelled to walk, his sufferings was shown by hastened breathing and dilated nostrils.

In the case of an African rhinoceros, the knees and hocks were simultaneously attacked, and the suffering of the animal was intense. The animal would lie on its side with all four legs extended, and when any attempt was made to disturb him he would groan with pain, and could only gain his feet with great effort. All the joints were very painful on pressure and much swollen; the skin was dry and hard; the mucous membrane of the nose and mouth congested, and the eyes very much injected. When made to move he would do so with very great difficulty, slowly and stiffly, grunting or groaning at each movement.

Treatment.—To place an animal suffering from rheumatism in warm, dry, quarters, is the first important step to take. Carnivorous animals have been greatly benefited by the following:

Sodium salicylate, half oz., water six oz., the dose for any animal up to fifty pounds weight being one or two teaspoonsful. This mixture should be given every two or three hours in a few ounces of milk, until improvement is observed; then at longer intervals to complete recovery. Exposure to cold should be carefully guarded against during the convalescent stage, as there is great tendency to relapse. An animal with rheumatic tendencies should not be allowed to lie on concrete floors.

In the case of the young African rhinoceros, salol in one dram doses was tried for about a week, but without any marked benefit. This was then discontinued and salicylate of sodium substituted with the result that the animal showed almost immediate relief. This continued for three weeks when entire recovery had taken place. While this was a very striking case, still, we have had equally good results in the treatment of rheumatism in other animals by the administration of this drug.

It appears that the secret of success with salicylate compounds, lies in the speedy saturation of the system with the drug, rather than its moderate and continuous administration. It is not desirable, however, to continue this indefinitely, but when immediate relief has been secured to give the agent but twice a day. If the salicylate of sodium fails to relieve, when well administered for two or three days, there is reason to believe that the case is not one of genuine rheumatism. In such cases a combination of quinine and potassium internally might be employed with some hope of success.

In acute joint rheumatism, anodynes are often applied to the affected parts with good results. In such cases lead and opium lotion applied freely to the joints and the parts covered with cotton and bandaged, will be found to afford much relief. If the pain is excessive, repeated doses of Dover's powder will be found useful in allaying the pain. In the less violent cases camphorated oil, soap liniment, or a combination of essential oils, as turpentine or peppermint with aqua ammonia and linseed oil or sweet oil, may secure much relief. The local application of anti-rheumatic agents would embrace all the salicylates, oil of wintergreen and peppermint.

A course of tonics is often the best resort in chronic rheumatism. While Fowler's solution and tincture of muriate of iron have been beneficial in the larger animals, iodide of iron has been helpful in other cases. The local treatment recommended for acute rheumatism is even more applicable to the chronic

form. Warmth, a sunny corral or cage, and a varied nutritious and easily digested diet are important conditions.

Inflammation of the Lips and Nose in Monkeys.—This troublesome condition is quite a common affection among South American monkeys, but the animals principally affected are, sapajous, spider monkeys and marmosets.

The disease is characterized by redness, swelling, heat and tenderness of the lips, cracks, blisters and abraded surfaces surrounding the mouth and nostrils.

Causes.—These may be classed as mechanical, chemical and microbian.

The disease occurs frequently among those animals whose cages are bedded with dry, fibrous hay containing vegetable irritants, such as red and white clover, fungi or musty substances. These substances acting as temporary irritants are usually the starting point of an abrasion on the lips and surrounding skin, and the inflammation is further aggravated by attacks of bacterial ferments. The bacteria present in the mouth, food or water, would have had no effect whatever upon the healthy membrane or skin, but as soon as these surfaces become denuded of the proper protective coverings, the bacteria at once begin to make serious inroads. The affection is also the result of fermented and decomposed food, and of too hot food and liquids.

Symptoms.—The lips are first red and inflamed. In a few days they exhibit excessive moisture and later the formation of blisters and scabs, which extend to the skin around the mouth and under the jaws. The swelling may become excessive and so painful that the animal will no longer attempt to feed. In severe cases emaciation and weakness follow and the animal dies from exhaustion. If the scabs are forcibly removed, raw, bleeding surfaces are left exposed.

Treatment.—These cases should be removed to a cage without bedding, and the lips treated by painting with five per cent. alcoholic solution of blue pyoktannin, or lead and opium lotion. In mild cases, which have as yet no excessive scab formation, saturated solutions of boracic acid are useful, and if applied several times daily, will be the only treatment necessary. For susceptible animals, avoid irritating substances, such as clover hay for bedding.

Diphtheria or Roup in Wild Birds.—Diphtheria or roup in wild birds is an infectious disease, the lesions of which first appear on the mucous membrane of the eyes, nasal passages, the mouth, the pharynx and larynx, and may extend to the trachea, bronchi and air-sacs.

The specific cause of the disease known as diphtheria or roup has not been positively determined.

It is recognized by a grayish-yellow, fibrinous exudate which forms upon the mucous surfaces of one or more of the parts mentioned. The exudate may be so abundant as to obstruct the air passages. The disease is usually very acute, progresses with great rapidity and destroys most of the birds attacked.

Among wild birds in captivity, the disease is common in hawks, vultures, owls, eagles, pheasants, quail, pigeons, storks, flamingoes, ducks, and various other water birds. Avian diphtheria is apparently quite distinct from human diphtheria.

Symptoms.—At the outset of the disease there is a watery discharge from the nostrils and eyes, with general weakness and prostration greater than would be expected from simple catarrh. The birds sit with the back arched, the head and neck drawn toward the body, the plumage roughened. Respiration is more or less obstructed, rapid and audible; the vision is impaired and swallowing difficult. There is frequent shaking of the head, sneezing and expectoration of mucous secretions. Within a day or two the appetite disappears, and there is a diarrhea with greenish or yellowish evacuations. From the open beak there escapes a thick, stringy, grayish mucous; the eyes project unnaturally and are covered with the thick secretion which has accumulated between the lids; the nostrils are obstructed by the thickened and dried secretions; the mucous membrane of the mouth and pharynx is congested and shows numerous dark red elevations covered with fibrinous exudate, and later these patches, consisting of thick masses of exudates, become milky white or yellowish brown in color, and if removed leave behind a more or less granular and healed surface.

Prevention.—In order to prevent this disease many conditions must be strictly enforced. In addition to the general sanitary methods, the following rules should be observed:

1. Birds which have an exudate on any of the mucous membranes of the head should not be placed among healthy stock.

2. If the disease appears in one or more birds, they should be immediately separated from the healthy ones. If possible, the source of the infection should be determined and removed.

3. After the removal of sick birds, disinfect the houses and runs with a five per cent. solution of carbolic acid or creolin, and repeat this disinfection at least once a week while the disease remains. Burn or safely bury all birds dying from this affection.

Treatment.—The sick birds should be placed in a warm, dry, well ventilated hospital room, where they will not be exposed to draughts, and can be readily caught for examination and treatment.

During the past two years, experimental treatment with Diphtheria Roup Antitoxin among hawks, herons, pheasants and other susceptible birds has led to gratifying results. When the birds have been discovered in the early stages of the disease, a single injection of $1\frac{1}{2}$ c.c. of antitoxin sufficed for a complete cure.

Intra-muscular injection of antistreptococcic serum has also been of benefit in mild cases.

The diphtheretic membranes forming in the mouth should be removed just as soon as this can be done without causing bleeding from the affected surface, after which tincture of iodine should be applied to the part.

Birds that have been affected with diphtheretic roup should not be returned to cages with other birds for four weeks after recovery; otherwise they might still communicate contagion.

Infectious Entero-Hepatitis in Turkeys.—This is an infectious disease of turkeys especially destructive to the young birds. It is due to a protozoan (*Amoeba meleagridis*), and characterized by an inflammatory thickening of the walls of the caeca, yellowish or greenish areas of degeneration of the liver, and congestion with blackish discoloration of those portions of the head that are not covered by down or feathers.

Symptoms.—The disease is most frequent and fatal in young birds and the symptoms of different cases vary considerably in proportion to the intensity of the disease and the relatively extensive lesions in the different organs. The common symptoms are those of general ill health; dullness, drooping of the head between the wings, erection of the feathers, separation from the flock. The bird moping alone and sitting much of the time.

There is always a loss of appetite, greenish diarrhea and a yellowish or brownish discoloration of the visible mucous membranes, especially of the eyes. Emaciation becomes extreme if the subject survives long enough, and a more or less blackish discoloration of the gobble and bare portion of the skin covering the head occurs.

Lesions.—The lesions of this disease are quite characteristic and constant; the caeca being frequently enlarged, the walls thickened by a gelatinoid deposit arranged in layers, while the contents of the bowel are soft, pasty or of a greenish liquid appearance. The comparative stagnation of the contents of the caeca, as in the appendix of man, appears to favor infection by microbes.

The liver changes consist of extensive infective inflammation, followed by degeneration and necrosis. The surface over the affected parts show a variety of colors, as brown, red, grayish or dirty white.

Treatment.—Treatment would be along the lines of intestinal antiseptics, as Xeroform, bismuth, salol or sulphuric acid with a laxative of oil to carry these agents unchanged to the caeca. But no success has attended our attempts in this direction, and the danger that comes from keeping the infected birds around, and the constant multiplication of the microbe far more than counterbalances any possible recoveries.

Prevention.—It has been repeatedly shown that the *amoebae* passed with the faeces of the infected bird, contaminates the food and water and then actively propagate the disease. Preventive measures must then be mainly directed toward the purification of these infecting media. The ground as well as the compartments containing the infected birds will require thorough disinfection. All droppings as well as other litter must be carefully removed and burned. The nests, roots and drinking vessels, should be disinfected with a mixture of sulphuric acid, one-half gallon, carbolic acid, one-half gallon and water, twenty gallons.

Respectfully submitted,

W. REID BLAIR, D. V. S.,

Veterinarian and Pathologist.

January 1, 1911.



SEA ELEPHANT.

Sea Elephants in the New York Aquarium.
Flash-light photograph by Elwin R. Sanborn.

REPORT OF THE
DIRECTOR OF THE AQUARIUM

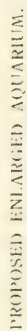
TO THE BOARD OF MANAGERS

THE Aquarium was under the constant supervision of the Director from January 1, 1910, until June 14, 1910, when, with the consent of the Executive Committee of the Zoological Society, he was made Acting Director of the American Museum of Natural History for the rest of the year. His connection with the Museum will continue until February, 1911, a further leave of absence having been granted at the request of the trustees of the Museum.

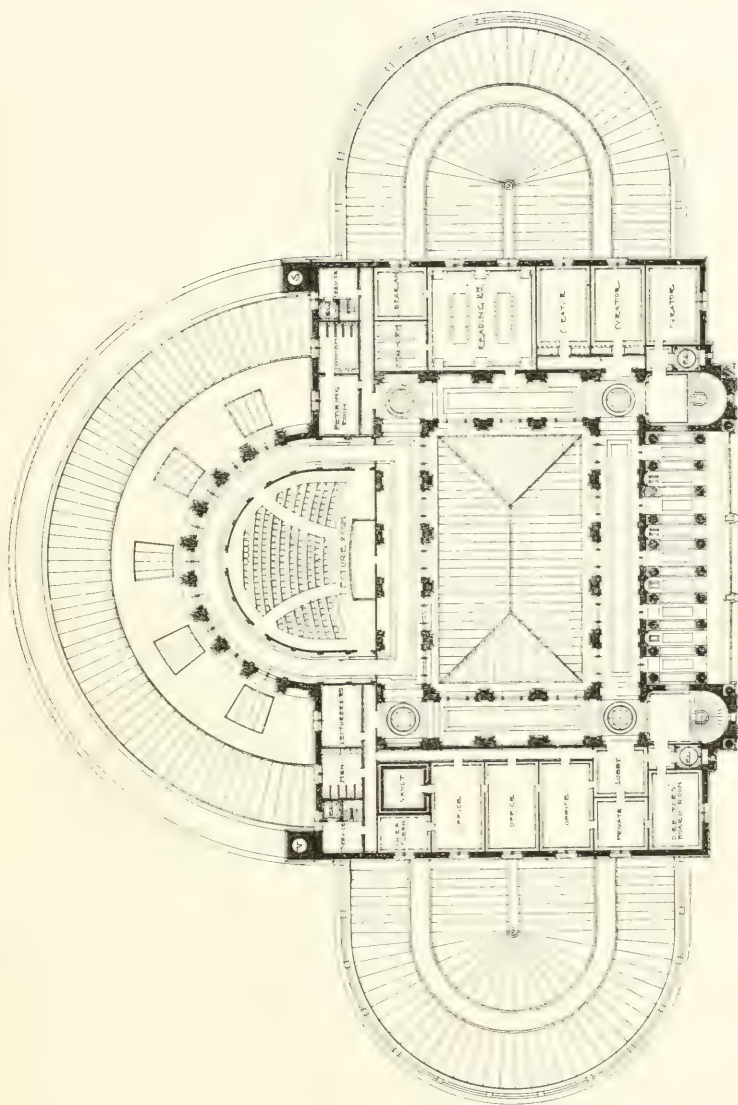
The care of the Aquarium during the latter half of the year 1910 was in the hands of Dr. Raymond C. Osburn, Assistant Director, under the general supervision of Director Townsend, who devoted one day a week to Aquarium matters.

This arrangement proved satisfactory, the Director's leave of absence without pay being at a time when the Zoological Society had decided to relax its efforts in the improvement of the old Aquarium building, believing that a new building had become a necessity. The work of the Assistant Director at present is practically confined to routine matters. The Director keeping in touch with the architect in the preparation of plans for a larger building.

The building now used as an Aquarium is no longer suitable for the purpose. The number of visitors has increased from year to year, until it has become uncomfortably crowded, and there is no room for the increase of the collections. The Aquarium has become one of the important museums of the City and has had the office business of a museum forced upon it, such as a large correspondence and the active interest of the public, entail. This work is being done without sufficient office room and equipment, and no expansion is possible within the present walls.

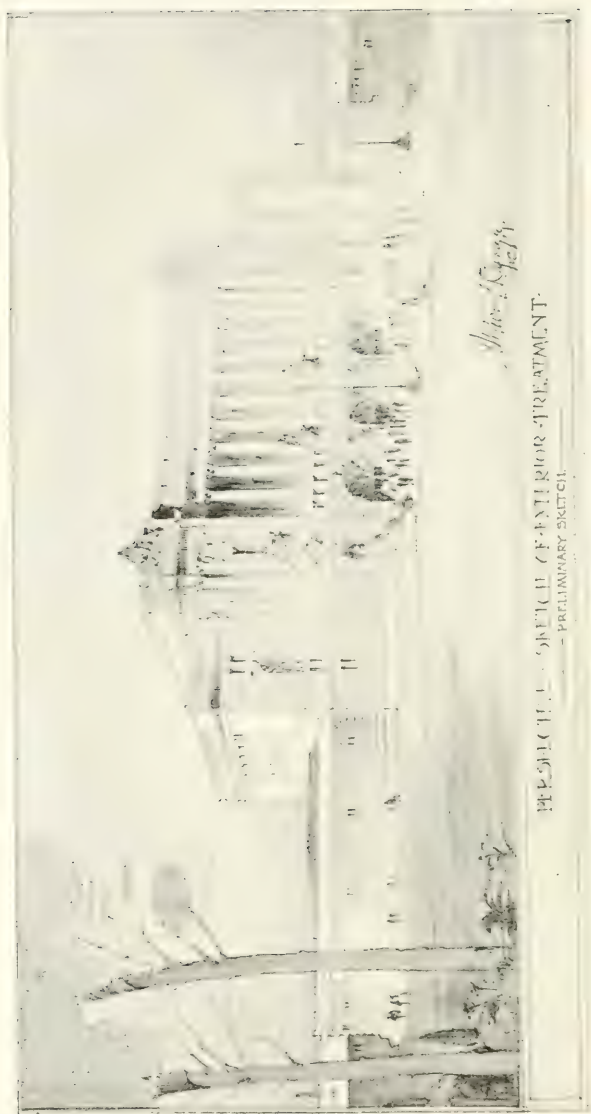


From a drawing by the architect, J. Stewart Barney.



PROPOSED ENLARGED AQUARIUM.
Second Floor Plan.

From a drawing by the architect, J. Stewart Barney.



FRONT ELEVATION OF THE PROPOSED ENLARGED AQUARIUM.
Preliminary sketch by the architect, J. Stewart Barney.

The relations of the Aquarium with the schools and colleges of the City have become such that provision must be made for laboratory space. The colleges, especially, demand facilities for a certain amount of marine work, such as only a well equipped Aquarium can afford.

The Aquarium should also have space for statistical work in connection with the great commercial fishery industries centered in New York.

The attendance exceeds three millions of persons a year and continues to increase. Such increase of space as might be secured by the removal of the boilers and machinery to an outside building, projecting over the sea wall, would permit of a slight expansion of the exhibits, but would afford no relief to visitors.

Provision should be made for the future as well as for the present, as the Aquarium already faces the necessity of providing for more visitors than all of the other museums of the City combined. Its attendance is, in fact, greater than that of any museum of any kind in the world. While the New York Aquarium is already larger than any other aquarium, it is not large enough for New York.

The plan of enlargement proposed by the Zoological Society provides increased space for visitors and for exhibits, as well as sufficient office and laboratory space. It calls for the best possible utilization of the present building by the introduction of a third tier of tanks, and for a slight extension forward of the structure, to secure additional room for offices, with short wings as exhibition halls. This arrangement would provide everything necessary for years to come.

Already the most popular resort of the people, exceeding even the Hippodrome in attendance, it would, with an enlarged and beautiful building like that proposed by the Zoological Society, become almost immediately one of the most celebrated institutions in the world.

The general report has been prepared by the Assistant Director and is transmitted herewith.

Respectfully submitted,

CHARLES H. TOWNSEND,

Director.

January 1, 1911.



FUR-SEAL PUPS.
New York Aquarium.

*REPORT OF THE
ASSISTANT DIRECTOR OF THE AQUARIUM
TO THE BOARD OF MANAGERS

PLANS FOR IMPROVING AND ENLARGING THE AQUARIUM BUILDING

IN the Report of the Director for 1909 considerable space was devoted to outlining the need of a building and equipment commensurate with the work of an institution occupying the position of the New York Aquarium. These needs have been nowise lessened during the past year, but on the other hand they have been considerably augmented.

The exhibition space, although as great as the present building will allow, is crowded to the limits of its capacity by the collections now on hand; a condition that has existed for several years. While in the past the Aquarium has of necessity confined itself almost entirely to the exhibition of fishes, other groups of aquatic animals offer attractive and instructive material for display. The very interesting exhibit of the Naples Aquarium consists largely of invertebrates, while our collection of lower forms is limited to the few that can be accommodated in small, portable aquaria placed on the coping of the floor pools and supplied with the harbor water. While the conditions of lighting are as good as can be provided in the present building, we are unable to keep aquatic plants successfully for the reason that they do not receive sufficient sunlight. We are thus limited absolutely to our present classes of exhibits with no opportunity for improvement or growth.

Although our present Aquarium contains the largest collection of living fishes in the world, our work is necessarily very one-sided. With sufficient space, in the form of an addition to our present building, we should be able to exhibit more of the larger species of fishes, together with reptiles and amphibians,

*The office of Assistant Director has been made permanent, and Mr. Chapman Grant, B. A. (Williams 1910), was appointed Scientific Assistant. EDITOR.

and also to add and properly display collections of invertebrates and aquatic plants, both marine and fresh-water, for the instruction and entertainment of the public.

Further, it has become necessary to increase the office and filing space, and the only room available for this purpose was the laboratory room, which has for a long time been at the service of the public school teachers, their classes and others especially interested. This room was equipped with balanced aquaria containing many smaller animals which could not, under existing conditions, be exhibited in the hall open to the public. The laboratory was also used as a monthly meeting place by the Aquarium Society, and occasionally by such scientific bodies as the American Fisheries Society, the National Association of Shellfish Commissioners, etc. The devotion of this room to administration purposes makes it impossible in the future to extend such courtesies to scientific societies or to provide for teachers and their classes, except as they can make use of the public exhibition hall.

Constantly growing demands are being made on the Aquarium for assistance in scientific matters and laboratory facilities and material for carrying on scientific research. Unfortunately the most of these requests must be refused or met in an imperfect manner. The Aquarium has already become a sort of general information bureau on all things aquatic as well as other matters of a scientific nature, not only locally, but for the world at large. Until now the entire scientific staff of the Aquarium has consisted of the Director, who has managed all the affairs of the institution, who has been responsible for its development along correct lines, who has planned and overseen all the work of improvement to the building and equipment and the collections and looked after the finances, besides attending to a constantly growing correspondence. While thus overwhelmed with a multiplicity of duties in connection with the administration of the Aquarium, the Director has nevertheless undertaken to prepare two of the New York Zoological Society *Bulletins* with Aquarium items each year and publish various papers of scientific value. All of this work has been carried on with the aid of a single clerk.

The addition of an Assistant Director, who will devote a portion of his time to the Aquarium, and of a Scientific Assistant, to the administrative staff will, after the return of the Director, relieve the congestion somewhat and permit the completion of a greater amount of scientific work. But the development of a scientific institution cannot depend entirely upon the work of one or two men, however efficient they might be, and if the New York

Aquarium is to occupy the place among scientific institutions that it should, some provision must be made for this growth.

There are two ways in which this may be met: one is to provide a staff of curators who will be, not merely caretakers, but men of scientific ability who will be able to carry on scientific research in their various lines; the other to provide an opportunity for volunteer research by furnishing adequate laboratory space, equipment, material and library facilities of sufficient value to attract scientists to carry on aquatic research in our institution.

With regard to the former little need be urged in its favor, as it is a successful and established method already in use in the Museums, the Zoological Park, the Botanical Gardens and similar institutions outside of the City; and the latter method is by no means a new idea. The great laboratory connected with the Naples Aquarium attracts the very flower of the scientific world by its facilities for research, while in our own country, the U. S. Fisheries Laboratories at Woods Hole, Mass., and Beaufort, N. C., as well as the Marine Biological Laboratory at Woods Hole, and the Carnegie Laboratories at Cold Spring Harbor, N. Y., and the Tortugas Islands, Florida, as well as many other similar laboratories the whole country over, attest to the popularity of such institutions for the furthering of research. However, in America as yet there is no great laboratory open throughout the year to investigators in the realm of aquatic biology. As a result practically all problems in this field, that have been solved by American investigators, are of such a nature that they can be carried out during the summer months when the summer laboratories are open. But there are many problems for which the proper material cannot be secured in summer, and others which require a longer season of research with living material than the summer laboratories afford. This is the age of scientific investigation, and the New York Aquarium should not be behind the other institutions of the City and country in furthering the work. In the opinion the writer, both of the above mentioned plans should be put into execution.

The educational value of the public aquarium and the general interest of all classes of people in aquarium exhibits are no longer matters of conjecture. The remarkable attendance at our Aquarium, far outnumbering that at any other city institution, attests its popularity in much stronger terms than mere words can do. The Detroit Aquarium, which has been in existence only seven years, already has an annual attendance approaching the million

mark. Plans are under way in a number of the larger cities of the country for the building of aquariums; notably Boston, Washington, Philadelphia and San Francisco; and the New York Aquarium has been called upon to furnish data not only for these but for a number of others the world over; some as remotely situated as Manila, P. I., and Durban, South Africa.

If the New York Aquarium is to occupy a place on a plane with the other great scientific institutions of the city and country, and if it is to meet the demands imposed upon it by an ever increasing public attendance, it is essential that plans for an adequate building and equipment should be brought to fulfilment as soon as possible.

The preliminary plans of a proposed addition to the Aquarium building were published in the Director's report for 1909. These plans have been revised during the past year and are presented on pages 112, 113 and 114. It is probable that the Director will find it necessary to make a trip to investigate conditions in the various aquariums of Europe.

There seems no room for doubt that some radical change should be undertaken in making the Aquarium building presentable. The circle of magnificent buildings enclosing Battery Park is now complete, with the exception of a short block between Greenwich and Washington Streets, and no doubt this will soon be rebuilt. Surrounded by these great buildings, the Aquarium presents a very humble appearance. The only excuse for retaining the present building at all, is found in the fact that it is connected with certain historical events. However, it is not a part of our plan to do away with the present building, but to build around and over it in such a manner as to render it more pleasing in appearance and at the same time make it much more serviceable, while retaining substantially its present form. Situated as the Aquarium is, at the very front door of our great city, it should be made one of the most striking and monumental buildings of the waterfront, instead of the architectural eyesore that it now presents.

In the meantime, the public continues to throng the present Aquarium to a greater extent than any other aquarium, museum, or similar institution in the world, often in much greater numbers than can be accommodated.

IMPROVEMENTS AND REPAIRS

A number of breaks in the piping occasioned the loss of the stored sea-water to such an extent that it was found necessary

to bring in three tank-steamer loads of water, aggregating fully 30,000 gallons, to supply the deficiency. This water is secured outside the Ambrose Channel lightship and is the purest that can readily be obtained. That it is satisfactory, both from the standpoint of purity and of salinity, is shown by the fact that no special difficulty has arisen in keeping Bermuda fishes, seahorses, etc., since this reservoir was filled and the circulation put in running order.

There is a constant small loss of this water, due to usage, that cannot be prevented; but this would amount to only a few thousand gallons a year at most.

The principal loss during the past year was due to the breaking of the seven inch suction pipe leading from the reservoir. This break occurred in a portion of the pipe fitted with screwed connections. Another break occurred in the salt-water feed-pipe supplying the reserve tanks on the salt-water side, but occasioned no great loss of water. This pipe was also joined with screwed connections at the point of the break. While all this piping is lead lined, the lead often does not fit closely enough at the joints, in screwed connections, to prevent the salt water from coming in connection with the iron, and the gradual disintegration of the pipe results. Most of this series of piping had already been taken up and fitted with flanged connections, and in repairing the above breaks flanged joints were installed. The entire stored water system, with a few exceptions, is now fitted with flanged connections, obviating the rusting out of joints, with the consequent loss of water and possible damage to the collections. While these and other repairs have been under way, the collections have been carried without loss by the aid of the air pumps.

A new cross connection has been installed between the iron pumps, making it possible to place either of these pumps on the harbor water as well as on the stored water circuit, in case it becomes necessary from a breakdown of one of the other pumps.

A new fresh water heater has been placed on the circuit supplying the West Indies seal pool.

The repairs to the roof, mentioned as being under way in the last report of the Director, have been completed in a satisfactory manner.

Five additional skylights, of an oval shape, have been placed in the ceiling over the main hall, materially adding to the illumination. While this work was in progress, it was found that the ceiling was much in need of strengthening and this was attended

to. The repairs to the roof and ceiling and the placing of the skylights, were paid for out of the Improvement Fund.

In order to make possible the night opening of the Aquarium, additional electric and gas lighting was installed as follows: an additional row of gas lights on the gallery columns to illuminate the labels on the tanks; a double cluster of electric lights on the inner face of each of the central row and a single light on each of the outer row of columns on the main floor, and a cluster of electric lights in the vestibule. An electric sign with the word "Open" was also placed on the front of the building.

A partition across the laboratory room, which has been used chiefly by the public school teachers and their classes, has made additional space for office purposes. This change affords room for the clerk's office as well as storage space for library, office supplies, etc. A large wall case has been constructed in this room for storage purposes. A wire partition has been built in the lower offices, enclosing a space to be used as a coat room for classes visiting the Aquarium.

The offices on both floors and the women's retiring rooms on the ground floor have been repainted. Some painting was also done on the balcony columns, and the service galleries and wall space behind the tanks have been given a fresh coat of white-wash, increasing the light reflecting capabilities of this area.

An improvement which seems to have met with the approval of our visitors is a cabinet for exhibiting smaller animals behind large reading glasses. Four of these have been built and various smaller living species were shown which could not otherwise have been well exhibited. The number of visitors waiting for an opportunity to look through the lenses, indicates that the public is just as much interested in the smaller as the larger forms, when they can be properly seen.

A touch of color has been added to the main hall by the introduction of palms and bay trees around the copings of the floor pools and within the entrance.

COLLECTIONS AND EXHIBITS

The addition of specimens to the Aquarium collections has gone on steadily during the year with the result that the exhibits are at present as complete as at any time during the history of the institution. All the space that could be utilized for the purpose has been crowded in the attempt to exhibit these collections.

As a result of the continued experience of our Aquarist, the

careful treatment afforded our fishes and other animals has resulted in a very low death rate.

Five shipments of Bermuda fishes were made. Owing to untoward weather conditions at the time of shipment, the loss of these specimens in transit was heavier than usual; a loss which was made good by the Bermuda collector. Continued efforts were made to bring specimens of the Octopus from Bermuda, but all resulted in failure though the experiment was varied at each trial in the attempt to eliminate the cause of death.

Some splendid gifts of fishes were made to the Aquarium by the Pennsylvania and New York State Fish Commissions, the South Side Sportsmen's Club and Mr. O. Hazard. Through the kindness of Hon. W. E. Meehan, we received from the Pennsylvania State Fish Commission a fine collection of black basses, ranging in size from fingerlings to five year olds; also a lot of yearling yellow perch and young bull frogs. All these specimens were reared in the Pennsylvania hatcheries. The New York Forest, Fish and Game Commission has furnished us, through the courtesy of Dr. Tarleton H. Bean, State Fish Culturist, a fine collection of thirty albino lake trout, making a very striking exhibit. From the South Side Sportsmen's Club we have received two collections of very handsome brook trout, and from Mr. R. G. Hazard of Peacedale, R. I., a number of basses, pickerel and salt water fishes.

By purchase forty sea horses have been added; also a number of large skates and other fishes taken on the off-shore fishing grounds by the steamer Angler.

Three alligator snapping-turtles from the lower Mississippi were purchased, also some large hawksbill turtles, and a small leather-back turtle, which was presented, lived for some days in one of the floor pools.

Four young harbor seals were purchased in June, but all have since died from pulmonary troubles. It seems impossible to keep these seals for any length of time in confinement indoors.

The largest of the West Indian seals died on December 27, of lobular pneumonia, after a residence of more than a year and a half at the Aquarium. When received on June 14, 1909, the animal measured four feet ten inches and at death measured seven feet two inches to the end of the hind flippers, a growth of over two feet in eighteen months. The remaining two seals of this species are apparently in excellent condition. The old California sea-lion which has been in the Aquarium for three years retains his usual vigor.



FUR-SEAL, YOUNG MALE.

A very unusual addition to our collections is a pair of fur-seal pups from St. Paul Island, Alaska, the gift of the United States Bureau of Fisheries. These attractive little animals were received on November 23, and were, at that time, not more than five months old. Since that time they have made themselves at home in one of the large floor-pools and have grown nicely; the male adding four pounds and the female three pounds during the first month. These are the first specimens of this seal ever exhibited in New York City, and, with the exception of two which have been kept in Washington for the past year, the first to be exhibited in the eastern United States.

The New York Zoological Society has voluntarily undertaken to pay out of its own funds for all specimens purchased by the Aquarium. Since the Society took this matter over in June, 1910, it has expended \$973.90 toward the Aquarium collections and has secured through gifts exhibits to the value of \$625.

The Aquarium collections have been further augmented by our own employees, especially by our Collector, Mr. John J. DeNyse. Some idea of the amount of these collections may be gained from the following figures:

For exhibition, 500 fishes of thirty-three species; 6,000 specimens of the larger invertebrates of thirty-five species, and several thousand eggs and young of the horseshoe crab. For the fish-hatchery, 550,000 eggs of the yellow perch; for fish-food and exhibition, thirty-nine quarts of shrimps; 112 lots of small crustaceans (sand fleas, etc.), especially for food for the sea horses; 300 quarts of killifishes, besides considerable quantities

of hake, whitebait and herring for fish-food. Aquatic plants of several kinds were also brought in from time to time for exhibition and for aerating the balanced aquaria.

FISH-HATCHERY

Through the kindness of the United States Bureau of Fisheries, the Tuxedo Club of New York, and the Blooming Grove Hunting and Fishing Club of Glen Eyre, Pa., all of whom have supplied us with fish eggs, we have been able to keep the model fish-hatchery in operation for a considerable part of the time. The following species have been exhibited in process of hatching: whitefish, steelhead trout, blackspotted trout, brook trout, quinnat and Atlantic salmon and yellow perch. The last mentioned were supplied through the efforts of our collector from Wading River, Long Island and Charlottesburg, N. J. The output of the hatchery, except such as we have retained for exhibition purposes, has been distributed by the New York Forest, Fish and Game Commission.

ASSISTANCE TO TEACHERS AND INVESTIGATORS

As in former years, we have continued to stock balanced salt-water aquaria with water, small animals and plants for the public schools, whenever called upon and the large laboratory room on the second floor has been open to teachers with their classes until recently for the purpose of studying the animals and plants in the balanced aquaria. Since we were compelled to make use of this room for administration purposes it has been necessary to exclude the public altogether. However, a number of the balanced aquaria have been put on exhibition in the balcony, and space for a cloak room for the use of visiting classes has been provided in the lower office. Professor Jacques Loeb of the Rockefeller Institute, has been supplied with certain material for research, and Mr. G. G. Scott of the College of the City of New York has been able to make use of our limited laboratory space to carry on investigations on the blood of fishes.

ATTENDANCE

A considerably larger number of visitors made use of the Aquarium during 1910 than in any previous year except 1909. The unusually large attendance of that year must be attributed in part to the great influx of visitors to the city in connection with the Hudson-Fulton Celebration. While the attendance for 1910 did not reach that for 1909; it was some 500,000 larger

than 1908, and a glance at the comparative table will show it to be about the normal increase.

Following is the attendance by months at the Aquarium during 1910:

January	Number of visitors	143,938	Daily average	4,643
February	"	171,781	"	6,135
March	"	225,180	"	7,263
April	"	241,625	"	8,054
May	"	385,389	"	12,431
June	"	373,463	"	12,448
July	"	546,982	"	17,644
August	"	340,019	"	10,968
September	"	181,496	"	6,049
October	"	196,156	"	6,327
November	"	107,584	"	3,586
December	"	89,898	"	2,899
Total	"	3,003,511	"	8,228

The following table shows the number of visitors annually at the Aquarium for the past fourteen years and gives a good idea of the rapid and constant growth in attendance:

1897	Visitors.....	1,635,252	Daily average.....	4,480
1898	"	1,689,471	"	4,628
1899	"	1,841,330	"	5,044
1900	"	1,585,584	"	4,344
1901	"	1,644,856	"	4,506
1902	"	1,700,453	"	4,659
1903	"	1,547,873	"	4,240
1904	"	1,625,770	"	4,554
1905	"	1,726,170	"	4,729
1906	"	2,106,569	"	5,771
1907	"	2,131,393	"	5,839
1908	"	2,536,147	"	6,948
1909	"	3,803,501	"	10,420
1910	"	3,003,511	"	8,228
Total for 14 years		28,577,880	"	5,592

OBITUARY

Mr. L. B. Spencer, who had been connected with the Aquarium in the capacity of Aquarist since May 1, 1894, died April 16, 1910, at the age of 73 years.

NOTES

On September 27, 1910, the American Fisheries Society held its Fortieth Anniversary Meeting at the Aquarium. The members lunched as the guests of the New York Zoological Society and again met at the Aquarium on September 29. At this meeting, which was the largest in the history of the Society, the subjects under discussion embraced practically every phase of fisheries work. The Director and Assistant Director participated as members of the committee on arrangements and also presented papers.

The New York Aquarium Society, a private organization composed chiefly of fish fanciers, held its First Annual Exhibition at the New York Aquarium from November 19, to the 26. The collections exhibited consisted chiefly of fancy species of local and exotic fishes such as can be kept in small balanced aquaria. The exhibit was open to the public, and the public school teachers and their classes were especially invited.

During the month of October, the Aquarium participated with other City departments in the Budget Exhibit, displaying such materials and data as were approved by the Director and the Chairman of the Executive Committee.

The experiment of keeping the Aquarium open until ten o'clock at night was tried from September 22, until November 9, inclusive. The attendance was such as to show that the public appreciated the opportunity, and the experiment was only terminated when the condition of the funds rendered it necessary. It is recommended that the building be kept open in the evening during the warm months of 1911.

Respectfully submitted,

RAYMOND C. OSBURN.

Assistant Director.

January 1, 1911.

List of Gifts
TO THE ZOOLOGICAL SOCIETY.

From January 1, 1910, to January 1, 1911.

- ABBAY, RAYMOND, Hollis, L. I.:
Acadian Owl.
- ADAMS, MR. AND MRS. FRANKLIN, Washington, D. C.:
Solenodon (3 specimens).
- ALYEA, JR., G. R., Rutherford, N. J.:
Blacksnake.
- AMERICAN MUSEUM OF NATURAL HISTORY, New York City:
European Song Thrush.
- ANONYMOUS, New York City:
Macaw.
- ASCHENBRAND, K., Port Jervis, N. Y.:
Shama Thrush.
- ASTLETT, H. A., New York City:
1 Sun Bittern, 1 White-Backed Trumpeter, 1 Brown-Naped Wood Rail,
2 Horned Screammers. Total, 5 specimens.
- AUDUBON SOCIETY, New York City:
Hermit Thrush.
- AVERY, MRS. A. A., Oil City, Pa.:
Alligator.
- BAGG, DR. CLINTON L., Lyons Falls, N. Y.:
Marsh Harrier (2 specimens).
- BAGLEY, HENRY M., Whitestone, L. I.:
4 Preying Mantis, 4 Mantis Cocoons.
- BAKER, WILLIAM MUNFORD, New York City:
Milk Snake (2 specimens).
- BARBOUR, WILLIAM, New York City:
Hooded Cobra (7 specimens).
- BECHTEL, W., New York City:
European Siskin.
- BECKER, CONRAD, Hoboken, N. J.:
Central American Boa (3 specimens).
- BEDFORD, DUKE OF, Woburn, England:
Eland (2 specimens).
- BELL, MRS. W. C., Bayside, N. Y.:
Chameleon.
- BENEDICT, E. W., Bethlehem, Conn.:
2 Leadbeater Cockatoos, 2 Bare-Eyed Cockatoos, 2 Roseate Cockatoos, 2
Gray-Headed Gallinules. Total, 8 specimens.
- BERGSTROM, MISS GERTRUDE, Passaic, N. J.:
Alligator (2 specimens).
- BIRD, CHARLES S., East Walpole, Mass.:
Lioness. (Lassoed by Col. C. J. Jones and his cowboys.)
- BLACKHURST, JOHN, New York City:
Tovi Parakeet (2 specimens).
- BLASCHKE, F., New York City:
Barbary Turtle Dove.
- BLAUERT, F. J., New York City:
Laughing Gull.

- BOLES, GEORGE, Greenwich, Conn.:
White-Throated Sapajou.
- BOPP, ARTHUR, New York City:
Chameleon.
- BREARLEY, MRS. W. H., New York City:
Yellow-Headed Amazon Parrot.
- BREIHOF, MISS M., New York City:
Alligator.
- BRISSON, MRS. C., New York City:
Slate-Colored Junco.
- BROWNING, WILLIAM, New York City:
Ruddy Sheldrake (2 specimens).
- BUCKINGHAM, MISS E. E., New York City:
Box Tortoise.
- BURNS, MRS. M., New York City:
Blue-Fronted Amazon Parrot.
- CAMPBELL, DAVID, New York City:
White Rat.
- CAREY, HENRY D., City Island, N. Y.:
Ocelot.
- CLEMONS, MISS CLARA A., Newark, N. J.:
Box Tortoise.
- COLLINS COMPANY, CHARLES, New York City:
Bald Eagle.
- CRAMER, EDWARD, Brooklyn, N. Y. C.:
Roseate Cockatoo.
- CRANDALL, MRS. L. S., New York City:
Reed Bunting.
- CRANF, MRS. A. B., Scarsdale, N. Y.:
Opossum.
- CRASTER, DR. CHARLES V., New York City:
2 Screech Owls, 3 Turkey Vultures, 1 American Crow, 1 Red-Tailed Hawk,
1 Fish Crow, 2 Red-Shouldered Hawks. Total, 10 specimens.
- DAMM, JR., JOHN, New York City:
Alligator.
- DAVIS, W. J., Stamford, Conn.:
Herring Gull.
- DE BRICHY, A., Beacon Falls, Conn.:
Hog-Nosed Snake.
- DE FERE, PAUL E., New York City:
White-Faced Sapajou.
- DEPARTMENT OF FOREST, FISH AND GAME, Albany, N. Y.:
2 Goldfinches, 1 Junco.
- DILLON, W. T., New York City:
Snapping Turtle.
- DIMON, C. L., Mount Vernon, N. Y.:
Mockingbird.
- DORN, RICHARD, New York City:
Viviparous Fish (4 specimens).
- DRAKE, D., Sharon, Mass.:
Flying Squirrel (4 specimens).
- DRAKE, J. S., New York City:
Canary.
- EDDY, DR. G. M., AND C. L. SMITH, New York City:
Texan Bob-White (2 specimens).
- EUSTIS, MRS. J. B., New York City:
Alligator (2 specimens).
- EVANS, MISS MABEL LOUISE, Montclair, N. J.:
Keel'd Lizard.

- FAGAN, R. J., Rahway, N. J.:
Solitary Sandpiper.
- FLACH, EMMA, New York City:
Red-Faced Lovebirds (2 specimens).
- FLYNN, R. H., South Norwalk, Conn.:
Opossum.
- FORDHAM HOSPITAL, New York City:
Screech Owl.
- FRANCKE, TRANGATT, New York City:
Screech Owl.
- FULLER, MRS. EUGENE, New York City:
Canary.
- GEIGER, H. A., New York City:
1 European Goldfinch, 1 Cut-Throat Finch.
- GILLETTE, MRS. K. C., Brookline, Mass.:
3 Orange Weavers, 1 Madagascar Weaver, 1 Dwarf Weaver, 1 Paradise Wydah, 1 Pin-Tailed Wydah, 2 Strawberry Finches, 1 Fire Finch, 3 Cordon Bleus, 2 Common Waxbills, 1 Bronze Manakin, 2 Spice Manakins, 1 Black-Headed Manakin, 1 White-Headed Manakin, 2 Red-Tailed Finches, 1 Pin-Tailed Nonpariel, 1 White-Throated Seedeater, 1 Hooded Siskin, 1 Green Singing Finch, 2 Bengalese, 2 Zebra Finches, 1 Diamond Sparrow, 1 Bullfinch, 1 Long-Tailed Grass Finch. Total, 33 specimens. 1 large bird cage and stand.
- GILMAN, MAJOR EDWARD R., New York City:
Indian Peacock (2 specimens).
- GODFREY, MISS FRANCES HERMINE, New York City:
Alligator (2 specimens).
- GOLLNIK, MISS PAULINE, New York City:
Acadian Owl.
- GONZALEZ, MRS., New York City:
Long-Tailed Green Parrakeet (2 specimens).
- GORDON, MR., New York City:
Purple Gallinule.
- GORDON, MASTER WILLIAM, New York City:
Opossum.
- GREENBERG, MRS. S., Van Nest, N. Y. C.:
Blue-Fronted Amazon Parrot.
- HALTER, CLARENCE, New York City:
2 Bullfrogs, 3 Common Frogs, 1 Common Toad, 1 Ribbon Snake, 1 Garter Snake, 3 Spotted Salamanders, 1 Wood Frog, 2 Box Turtles. Total, 14 specimens.
- HALTER, CLARENCE, AND ALFRED MANNHARDT, New York City:
8 Bullfrogs, 10 Ribbon Snakes, 15 Garter Snakes, 61 Painted Turtles, 13 Spotted Turtles, 25 Salamanders, 1 Wood Turtle, 1 Box Turtle, 2 Green Snakes, 3 Hog-Nosed Snakes, 4 Blacksnakes, 1 Ring-Necked Snake, 6 Water Snakes, 6 DeKay Snakes, 1 Milk Snake. Total, 157 specimens.
- HASHAGEN, HENRY B., New York City:
Tarantula.
- HAUSSLER, MASTER RAYMOND, Shelton, Conn.:
Great Blue Heron.
- HAVEMEYER, T. A., New York City:
2 Indian Black-Backed Geese, 3 Australian Maned Geese, 2 White Fantail Pigeons, 2 Red Jacobin Pigeons, 2 Black Carrier Pigeons, 2 Ruppell Spur-Winged Geese, 2 Yellow Pouter Pigeons. Total, 15 specimens.
- HEIMAN, DR. J., New York City:
Green-Cheeked Amazon Parrot.
- HENNING, MRS., New York City:
Brown Thrasher.

- HERRMANN, S., New York City:
European Jay (2 specimens).
- HIGH, JR., JACK, New York City:
1 Blue-and-Yellow Macaw, 1 Alligator.
- HOFF, JOSEPH B., Lakewood, N. J.:
Banded Rattlesnake (2 specimens).
- HOLDEN, EDWARD, New York City:
Red-Tailed Hawk.
- HOLDEN, SAMUEL S., Brooklyn, N. Y. C.:
Chicken Snake (2 specimens).
- HOLT, MISS BEATRICE, New York City:
Alligator.
- HOME, DR. R. S., New York City:
Common Macaque Monkey.
- JONES, CAPTAIN, New York City:
Rhesus Monkey.
- KAEGBEHN, ALFRED, Hoboken, N. J.:
Central American Boa (2 specimens).
- KANZE, RUDOLPH, New York City:
Sharp-Shinned Hawk.
- KATZENBACH, MISS A., New York City:
Alligator.
- KEELER, ERWIN, New York City:
1 Hog-Nosed Snake, 1 Garter Snake.
- KESSLER, MASTER HERMAN, New York City:
8 Black-and-White Rats.
- KINNEY, MRS. E. B., Rock City Falls, N. Y.:
Ring-Tailed Monkey.
- KITTERN, PAUL, Kingsbridge, N. Y.:
Canary (2 specimens).
- KLEMM, FRANK, New York City:
Sora Rail.
- KOST, MRS. HENRY C., New York City:
Alligator.
- KRENN, JOE, S. S. "Advance," N. Y. C.:
Two-Toed Sloth.
- KUNZ, MRS. A., New York City:
Alligator.
- KUSER, COL. ANTHONY R., Bernardsville, N. J.:
1 Indian House Crow, 1 Broad-Winged Hawk, 1 Red-Tailed Hawk, 1 Screech Owl, 1 Horned Owl. Total, 5 specimens.
- LA GAT, MADAME, London, England:
Common Marmoset.
- LAWRENCE, R. A., Brooklyn, N. Y. C.:
1 Goldfinch-Canary Mule, 1 White Java Sparrow, 1 European Goldfinch, 1 Orange-Cheeked Waxbill, 1 Napoleon Weaver. Total, 5 specimens.
- LEAVY, J. B., New York City:
Indigo Bunting (2 specimens).
- LEECH, MRS. JULIET WYLIE, New York City:
Cuban Amazon Parrot.
- LEHMANN, MISS JUNE, New York City:
Saw-Whet Owl.
- LEONARD, WILLIAM E., Dexter, N. Y.:
Sapajou Monkey.
- LEOPOLD, MISS J., New York City:
Alligator.
- LINCOLN, F. W., New York City:
Chinese Water Deer.

McCANDLESS, JOSEPH H., New York City:

Belgian Hare.

McCOLGAN, E., Baltimore, Md.:

15 Canaries, 1 Mexican Conure, 2 Orange-Cheeked Waxbills, 1 Common African Waxbill, 2 Strawberry Finches, 1 Black-Headed Manakin, 2 Bronze Manakins, 1 Linnet, 2 Madagascar Weavers, 2 European Goldfinches, 2 White Java Sparrows, 2 Grass Parakeets, 1 Gray-Headed Lovebird.
Total, 34 specimens.

McDERMOTT, MISS MARTINA, New York City:

Mockingbird.

McGRATH, MRS. ROBERT HUNTER, New York City:

Sulphur-Crested Cockatoo.

McINTYRE, HUGH, New York City:

Common Guinea Pig.

MACKAY, R. GORDON, Brooklyn, N. Y. C.:

Red-Billed Hill-Tit.

MAGILL, RAYMOND, New York City:

Alligator.

MANN, W. M., Pacific Grove, Califa.:

3 Boyle King Snakes, 1 Blue Racer, 3 Bull Snakes, 1 Ring-Necked Snake,
1 Keeled Lizard.

MANNHARDT, ALFRED, AND CLARENCE HALTER, New York City:

8 Bullfrogs, 10 Ribbon Snakes, 15 Garter Snakes, 61 Painted Turtles, 13 Spotted Turtles, 25 Salamanders, 1 Wood Turtle, 1 Box Turtle, 2 Green Snakes, 3 Hog-Nosed Snakes, 4 Blacksnakes, 1 Ring-Necked Snake, 6 Water Snakes, 6 DeKay Snakes, 1 Milk Snake. Total, 157 specimens.

MARSTEN, MISS MYRA, Coney Island, N. Y.:

Grass Parakeet.

MEAD, B. A., Mount Kisco, N. Y.:

Hog-Nosed Snake.

MERKEL, H. W., New York City:

American Crow.

MICHEL, FRED., New York City:

1 Common Box Tortoise, 1 Painted Turtle, 1 Musk Turtle.

MICHEL, MRS. FRED., Brooklyn, N. Y. C.:

Painted Turtle (2 specimens).

MILLER, MISS ELEANOR, Westchester, N. Y.:

Tovi Parakeet.

MILLER, OSCAR, Brooklyn, N. Y. C.:

6 Iguanas, 1 South American Tortoise.

MILLS, MISS STELLA, Kingsbridge, N. Y.:

Roseate Cockatoo.

MITCHELL, MISS ADDISON, New York City:

Undulated Grass Parakeet.

MOORE, E. D., New York City:

Canary.

MOREHOUSE, FRED. C., Bridgeport, Conn.:

Sharp-Shinned Hawk.

MORGAN, C. W., New York City:

Coati-Mundi.

MORSE, MRS. GEORGE R., New York City:

Canary.

MOSS, MRS. ADRIAN, New York City:

1 Bullfinch, 1 Red-Billed Hill-Tit.

NEW YORK AQUARIUM, New York City:

2 West Indian Tortoises, 1 Alligator.

NILES, JULIAN, New York City:

Barbary Turtle Dove (2 specimens).

- NISKI, MRS. ROBERT H., South Kent, Conn.:
Spotted Salamander.
- NORTHCLIFFE, LORD, London, England:
Wood Pigeon (11 specimens).
- OASTLER, MRS. F. R., New York City:
Common Guinea Pig.
- OESTRICH, MRS. CHARLES, New York City:
Roseate Cockatoo.
- PAINTER, KENYON V., Cleveland, O.:
1 Masked Wood Swallow, 2 White-Eye-Browed Wood Swallows.
- PAPKE, H., Jersey City Heights, N. J.:
Musk Turtle (4 specimens).
- PEARCE, GEORGE W., Brooklyn, N. Y. C.:
Red Fox.
- PETERS, W. R., New York City:
Screech Owl (3 specimens).
- PIEL, MRS. MICHAEL, New York City:
Chaffinch (2 specimens).
- PIERCE, MRS. C. H., New York City:
1 European Goldfinch, 3 Canaries.
- POOCK, CAPTAIN, New York City:
Limpkin.
- POTTER, R. B., Nyack, N. Y.:
Wood Tortoise (2 specimens).
- PYNE, MRS. M. TAYLOR, Princeton, N. J.:
Gila Monster (2 specimens).
- RAGOT, CHARLES, New York City:
1 Banded Rattlesnake, 1 Garter Snake.
- RAINEY, PAUL J., New York City:
6 Musk-Oxen, 2 Walrusses, 2 Polar Bears, 1 Blue Fox, 1 Puma. Total,
12 specimens.
- REMER, JOHN W., New York City:
Carrion Beetle.
- REYL, MASTER GEORGE, New York City:
Box Tortoise (2 specimens).
- RICE, M. A., New York City:
1 Red-Headed Cardinal, 2 Saffron Finches, 1 Superb Calliste, 1 Brazilian
Silver-Beaked Tanager. Total, 5 specimens.
- RICHARDSON, JENNESS, Rutland, Vt.:
1 Milk Snake, 1 Blacksnake, 1 Hog-Nosed Snake, 3 Garter Snakes, 15 Box
Turtles. Total, 21 specimens.
- RICHTER, MRS., New York City:
Screech Owl.
- RIDGWAY, JACOB E., Picacho Basin, Califa.:
Agassiz Desert Tortoise (4 specimens).
- ROBINSON, G. L., Locust Valley, L. I.:
American Magpie.
- ROEDER, MRS. GEORGE W., New York City:
Painted Turtle (2 specimens).
- ROGGE, JOHN C. L., New York City:
Flemish Giant Rabbit.
- ROMANO, FRANK, Van Nest, N. Y. C.:
Night Hawk.
- RUSTAN, ANNIE, Saugatuck, Conn.:
Snapping Turtle.
- SCHAFER, MRS. S., High Bridge, N. Y.:
Yellow-Headed Amazon Parrot.
- SCHAGHTICOKE RATTLESNAKE CLUB (*through W. B. Tuttle, President*), Stratford,
Conn.:
Banded Rattlesnake (3 specimens).

- SCOFIELD, MASTER LEONARD, New York City:
Box Tortoise.
- SCOTT, B. A., Ottawa, Ontario, Canada:
Loon.
- SCOTT, MRS. W. A., New York City:
1 Festive Amazon Parrot, 1 Gray-Headed Amazon Parrot.
- SEGELKEN, ROBERT, Jersey City, N. J.:
Green Monkey.
- SETON, ERNEST T., Cos Cob, Conn.:
Skunk.
- SHAW, JR., QUINCY ADAMS, Beverly Farms, Mass.:
Northern Ground Dove (7 specimens).
- SHAW, R. E., Charlottesville, Va.:
King Snake, Southern Green Snake.
- SHELDON, MRS. ROBERT T., New York City:
Shama Thrush.
- SHEPARD, A. D., New York City:
Cooper Hawk.
- SIGLER, MRS. LILLIAN, New York City:
Canary (2 specimens).
- SMITH, C. L., AND DR. G. M. EDDY, New York City:
Texan Bob-White (2 specimens).
- SMITH, C. R., New York City:
Alligator.
- SMITH, WILBUR F., South Norwalk, Conn.:
Red-Shouldered Hawk.
- SNYDER, GEORGE, New York City:
Java Sparrow.
- SPENCE, BERNIE L., Brooklyn, N. Y. C.:
Broad-Winged Hawk.
- STILL, CLIFFORD I., S. S. "Alliance," N. Y. C.:
West Indian Gopher Tortoise.
- STOCKIEN, E. W., New York City:
Woodchuck.
- STRICKLAND, GEORGE, New York City:
Screech Owl, Terrapin.
- TAG, FREDERICK C., New York City:
Alligator.
- TAYLOR, G., Brooklyn, N. Y. C.:
Flicker.
- THACHER, MRS. ARCHIBALD G., New York City:
Mockingbird.
- THEW, GILMORE E., New York City:
Hog-Nosed Snake (2 specimens).
- THOMPSON, G. L., New York City:
2 Rosella Parrakeets, 1 Cockatiel.
- THOMPSON, SAMUEL, New York City:
Blue-Fronted Amazon Parrot.
- TRENT, H. L., New York City:
Hog-Nosed Snake.
- TRUSLOW, G. P., Brooklyn, N. Y. C.:
California Quail.
- VAN BOGAERT, CHARLES, S. S. "Santurce," New York City:
Duck Hawk.
- VAN DE WATER, MRS., New York City:
Blue Jay (2 specimens).
- VON BRIESEN, ARTHUR, Fort Wadsworth, S. I., N. Y.:
Hog-Nosed Snake.

- VON BUEHREN, WILLIAM, New York City:
Garter Snake (8 specimens).
- VON KROCKOW, G., New York City:
4 Water Snakes, 12 Garter Snakes. Total, 16 specimens.
- WALSOE, MASTER SIGURD, New York City:
Common Box Tortoise (2 specimens).
- WASHBURN, I. T., Ossining, N. Y.:
Florida White-Tailed Deer.
- WASHINGTON, BOWDEN, New York City:
Scaled Quail.
- WATSON, PROFESSOR JOHN B., Baltimore, Md.:
6 Sooty Terns, 1 Noddy Tern. Total, 7 specimens.
- WEIDHASS, A. E., New York City:
Box Tortoise.
- WEIRAUCH, JOHN, Brooklyn, N. Y. C.:
1 Muhlenberg Turtle, 1 Spotted Turtle.
- WEST, CHARLES, Brooklyn, N. Y. C.:
Screech Owl.
- WHITEHOUSE, W. F., New York City:
Kinkajou.
- WHITMAN, ESMONDE, Katonah, N. Y.:
Sapajou Monkey (2 specimens).
- WILLIAMS, W., New York City:
European Goldfinch.
- WINTER, MISS AMELIA R., Great Neck, N. Y.:
Raccoon.
- WOLF, MASTER JOHN A., West New York, N. J.:
Diamond-Backed Terrapin.
- WOOD, MRS. WILLIAM H., New York City:
Alligator.
- WOOLLEY, HENRY S., Waterbury, Conn.:
1 Banded Rattlesnake, 1 Striped Snake, 1 Hog-Nosed Snake, 1 Blacksnake,
1 Painted Turtle. Total, 5 specimens.
- WOOLVERTON, SAMUEL, Scarsdale, N. Y.:
Opossum (2 specimens).
- WORTH, W. A., New Rochelle, N. Y.:
87 Garter Snakes, 45 DeKay Snakes, 3 Blacksnakes. Total, 135 specimens.
- WYLIE, MISS LUCILLA, New York City:
Undulated Grass Parrakeet.
- YOUNG, MRS. FLORENCE, New York City:
2 Canaries, 1 Highflier Pigeon.
- ZENTLER, MISS, New York City:
Pouter Pigeon.

Miscellaneous List

- McMILLIN, EMERSON, New York City:
Painting of White Mountain Sheep (30"x46") by Carl Rungius.
- RUNGUS, CARL, Brooklyn, N. Y. C.:
Painting of American Elk (36"x48") by Carl Rungius.

Gifts of Plants

- FORT, MRS. L., New York City:
2 Rubber Plants 5 feet high.
- MILLER, MRS., Westchester, N. Y. C.:
2 large Oleanders.
- MITCHELL, MISS ADDISON, New York City:
1 Pierson Fern.

Gifts to the Library

- CLARKE, JOHN M., Director State Museum, Albany, N. Y.:
 New York State Museum Memoir No. 12, Part I, Birds of New York, by
 Elon Howard Eaton.
- COLUMBIA UNIVERSITY PRESS, New York City:
 A Naturalist in the Bahamas (Memorial Volume), by John I. Northrop.
- HALL, CHARLES B., New York City:
 79 Old engravings of animal subjects.
 13 engraved portraits of men of science.
- OUTDOOR LIFE (*through J. A. McGuire*), Denver, Colo.:
 3 Bound Volumes of "Outdoor Life," for 1908 and 1909.
- RUSS, EDWARD, Hoboken, N. J.:
 Report of the New Jersey State Museum—Insects—1909.
- TRUSTEES OF THE BRITISH MUSEUM (Natural History), London, S. W., England:
 Memorials of Charles Darwin.
 Guide to the Crustacea, Arachnida, Onychophora and Myriopoda exhibited
 in the Department of Zoology, British Museum (Natural History).
 Guide to the British Vertebrates exhibited in the Department of Zoology,
 British Museum (Natural History).
 Hand-List of Birds, Vol. V, by R. Bowdler Sharpe, LL.D.
- VINCENT, FRANK, New York City:
 The Plant World.
 Through and Through the Tropics.
 The Land of the White Elephant.
 Actual Africa, or the Coming Continent.
 (All the above by Mr. Vincent.)
- WRIGHT, ARTHUR H., Ithaca, N. Y.:
 5 Zoological Publications.

List of Gifts to the

NATIONAL COLLECTION OF HEADS AND HORNS

(April 1, 1910, to April 1, 1911.)

- CAESAR, HENRY A., New York City:
Pacific Walrus, (*Odobaeus obesus*). Pair of tusks on skull.
- CLARK, JAMES L., New York City:
Bongo, (*Tragelaphus eurycerus*). Horns.
- CROSS & BAKER, Glenwood Springs, Colo.:
Interlocked Antlers of Mule Deer, (*Odocoileus hemionus*).
- DE RHAM, H. CASIMIR, Tuxedo, N. Y.:
Newfoundland Caribou, (*Rangifer terraenovae*). Mounted head.
Blesbok, (*Damaliscus albifrons*). Mounted head.
Sable Antelope, (*Hippotragus niger*). Mounted head.
Barren-Ground Musk-Ox, (*Ovibos moschatus*). Mounted head.
Astor Markhor, (*Capra falconeri*). Mounted head. Male; Horns and Scalp. Male; Horns and skull. Male.
European Red Deer, (*Cervus elaphus*). Antlers.
Livingstone Suni, (*Nesotragus livingstonianus*). Horns.
Karelin Sheep, (*Ovis karelini*). Mounted head and horns.
Turkistan Sheep, (*Ovis nigrimontana*). Mounted head and horns.
Himalayan Ibex, (*Capra sibirica*). Horns and skull. Male. 2 specimens.
Shapoo: Arcal Sheep, (*Ovis cycloceros*). Horns and skull. Male.
Narwhal, (*Monodon monoceras*). With 2 tusks, in skull.
- DURBAN, NATAL, Museum (Through T. W. Arthur):
Springbuck, (*Antidorcas euchore*). Horns. 2 specimens.
- GRANT, MADISON, New York City:
Big-Horn, (*Ovis canadensis*). Skull and horns.
- HARRISON, JR., GEORGE L., Philadelphia, Pa.:
Siberian Ibex, (*Capra sibirica*). Mounted head.
Siberian Roe, (*Capreolus pygargus*). Mounted head.
- HART, FRANK, Doylestown, Pa.:
Congo Buffalo, (*Bos nanus*). Horns.
Barasingha Deer, (*Cervus duvauceli*). Antlers.
- IOWA STATE UNIVERSITY (through Homer R. Dill), Iowa City, Ia.:
American Elk, (*Cervus canadensis*). Antlers. Male.
- KENT, EDWIN C., New York City:
New Brunswick Moose, (*Alces americanus*). Mounted head.
- MCDANIEL, DR. E. B., Cedar Rapids, Ia.:
Chinese Muntjac, or "Barking Deer," (*Cervulus reevesi*). Antlers.
- NORTON, G. FREDERIC, New York City:
Glacier Bear, (*Ursus emmonsii*). Skin.
- PHILLIPS, JOHN M., Pittsburgh, Pa.:
Rocky Mountain Goat, (*Oreamnos montanus*). Mounted specimen. (head, shoulders and fore-legs).
- ROSE, JOHN J., New York City:
Atlas Gazelle, (*Gazella cuvieri*). Horns. Female.
- WARD, R. A., London, England:
Sardinian Mouflon, (*Ovis musimon*). Mounted Head. Male.

The following have made cash contributions to the National Collection of Heads and Horns.*

Frank Hart, Charles Farrelly, John J. Paul, George Shiras, 3rd, Thomas Rowland, Townsend Lawrence, Edward Russ, William R. Coe, W. F. Gibson, Henry A. Caesar, Archibald Rogers, Louis Maurer, James Weeks, A. St. John Newberry, W. H. Chase, Bascom Little, G. M. Laughlin, Jr., John T. Pirie, Jr., M. F. Westover.

List of Gifts to the Aquarium

- AARON, MRS. FANNIE, New York City:
Young Alligator.
- ABBOTT, JOHN O., North Dikeman, Mass.:
Young Snapping Turtle (4 specimens).
- ANONYMOUS:
Young Crocodile.
- BANBURY, HOWARD, Brooklyn, N. Y. C.:
9 Painted Turtles, 2 Box Turtles.
- BLAIR, REGINALD, New York City:
Diamondback Terrapin.
- BLOOM, J., New York City:
Young Alligator.
- BLOOMING GROVE HUNTING AND FISHING CLUB, Glen Eyre, N. Y.:
Brook Trout Spawn (3,000).
- BOLAND, WM. G., New York City:
Young Alligator.
- BOWDITCH, J. BLAIR, Shelter Island, L. I.:
Young Alligator.
- BROWN, CHARLES A., Brooklyn, N. Y. C.:
Young Snapping Turtle.
- BRUCE, E. K., Thornburg, Iowa:
Fancy Japanese Goldfish (12 specimens).
- BURHAUS, SAMUEL, Westfield, N. J.:
Wood Turtle.
- CADMUS, IRWIN, Bayonne, N. J.:
Large Snapping Turtle.
- COHN, DAVID, New York City:
Young Wood Turtle.
- DAVIS, A. B., Wading River, L. I.:
Large Snapping Turtle.
- DECKER, A. B., Lake Hopatcong, N. J.:
8 Pickerel, 6 Yellow Perch.
- DECKERT, RICHARD, New York City:
Young Snapping Turtle (2 specimens).
- DODGE, MISS WARRENA, Brooklyn, N. Y. C.:
Young Alligator.
- DONOHUE, JOHN J., Brooklyn, N. Y. C.:
2 Diamondback Terrapins, Young Alligator.
- DORN, RICHARD, New York City:
10 Soft Shell Turtles, 11 Map Turtles.
- ERSKINE, WM. H., Brooklyn, N. Y. C.:
Young Alligator.
- FERGUSON, MASTERS FEARCHAR AND CRAIG, Halesite, L. I.:
Young Alligator (6 specimens).
- GALE, A. H., Brooklyn, N. Y. C.:
Comet Goldfish (2 specimens).
- GALBRAITH, THOS. B., New York City:
Young Alligator.

*See Treasurer's Report.

- GANONG, MILLARD, Bayonne, N. J.:
 Small Map and small Painted Turtles.
- GEIS, J., Brooklyn, N. Y. C.:
 Horseshoe Crab.
- GIBSON, MESSRS. GEORGE AND LOUIS, Montclair, N. J.:
 Young Alligator.
- GRANT, MRS. J. R., San Francisco, Cal.:
 Fancy Goldfish.
- HART, HARRY, Brooklyn, N. Y. C.:
 7 Painted Turtles, 2 Box Turtles, 1 Spotted Turtle.
- KING, MRS. S. F., Brooklyn, N. Y. C.:
 Young Alligator.
- LAGLER, MIKE, New York City:
 Box Turtle.
- LIND, WM., New York City:
 Box Turtle.
- LUCKHOFF, MRS. A., New York City:
 Young Green Turtle.
- LYNCH & Co., New York City:
 Painted Turtle (7 specimens).
- MACKIE, A. H., New York City:
 Young Alligator.
- LE MAIRE, FRANK R., Brooklyn, N. Y. C.:
 Young Alligator.
- MANERMEYER, HENRY, New York City:
 Young Alligator.
- MARQUIS, MISS F. O., New York City:
 Arizona Horned Toad (2 specimens).
- MAYER, DR. A. G., Dry Tortugas, Fla.:
 52 Bermuda Land Crabs, Hawksbill Turtle, Marine Goldfish.
- MEEKER, JOHN, Fairfield, Conn.:
 18 Bull Frogs, Spotted Turtle.
- MILLER, E., New York City:
 Angler.
- MORRIS, CHAS. A., Staten Island, N. Y. C.:
 Young Alligator.
- MURPHY & WHITE, New York City:
 Large Leatherback Turtle.
- MUSEUM OF THE BROOKLYN INSTITUTE (*through F. A. Lucas, Curator-in-Chief*):
 Cast of large Leatherback Turtle.
- NEW YORK ZOOLOGICAL SOCIETY:
 Salmon Rockfish, 6 Green Parrotfish, 3 Black Groupers, 15 Nassau Groupers,
 5 Spiny Lobsters, Red Crab, 7 Locust Lobsters, 6 Graysby, 4 Hogfish,
 9 Amberfish, 2 Black Grunts, 4 Sea Anemones, 15 Striped Grunts, 2 Green
 Morays, Rockfish, Bream, White Grunt, Mollie Miller, Queen Triggerfish,
 8 Doctor Fish, 11 young Snappers and Grunts, 4 Sergeant Majors, 55
 Angel Fish, 52 Squirrel Fish, 31 Hinds, 22 Coneys, 3 Red Snappers,
 16 Spot Snappers, 18 Spanish Hogfish, 8 Yellow Grunts, 3 Soap Fish,
 9 Common Triggerfish, 4 Yellowtails, 6 Mud Parrotfish, 9 Tiger Rockfish,
 7 Blue Crabs, Spider Crab, 8 Gray Snappers, Porgy, 9 Butterfly Fish,
 12 Yellowfin Groupers, Foureyes, 11 Spotted Morays, 15 Bluestriped
 Grunts, 3 Cowfish, 2 Trunkfish, 3 Softshell Turtles, 7 Hellbenders, 15 Map
 Turtles, 6 Blanding's Turtles, 12 Necturus, 41 Sea Horses, 2 Hawksbill
 Turtles, 6 Cyclid Fish, 19 Dogfish, 39 Sea Ravens, 31 Sculpins, 8 Horned
 Dogfish, 15 Muttonfish, 9 Barndoor Skates, 12 Cunners, 6 Prickly Skates,
 6 Skates, 6 Anglers, 5 Flukes, 5 Starfish, piece of Coral, 22 Sea Bass,
 Ling, Finger Sponge, 3 Blackfish, 3 Sea Robins, Hake, Whiting, 3 pieces
 of rock.

- NOBLE, J. P., New York City:
Green Frog (5 specimens).
- PAPKE, H., Jersey City, N. J.:
Musk Turtle (2 specimens).
- PARADISE BROOK TROUT CO., Parkside, Pa.:
30 two-year-olds, 50 yearlings and a collection of Brook Trout fry.
- PEARDE, C. A., Ridgefield Park, N. J.:
Young Alligator.
- PEARSON, PETER, New York City:
Bermuda Landerab.
- REDFIELD, E. F., Closter, N. J.:
Wood Turtle, 5 Salamanders, quantity of frog spawn.
- REID, FRED L., New York City:
Musk Turtle.
- RIDGWAY, J. J., New York City:
Fiddler Crab.
- ROBERTS, CAPT. J. R., Brooklyn, N. Y. C.:
Young Green Turtle.
- ROLSTON, HOWARD G., Brooklyn, N. Y. C.:
Young Alligator.
- SANBORN, ELWIN R., New York Zoological Park:
Axolotl.
- SCHALL, A., New York City:
2 Spot Snappers, Blue Grunt.
- SHOENGOLD, JOSEPH, Brooklyn, N. Y. C.:
Snapping Turtle.
- SOUTH SIDE SPORTSMAN'S CLUB, Oakdale, L. I.:
44 Brook Trout, 8 Rainbow Trout.
- STEEGER, OTTO, Stapleton, N. Y.:
Young Green Turtle.
- SUMNER, F. W., New York City:
5 Largemouth Black Bass, 2 Painted Turtles.
- THEES, OSCAR D., New York City:
Mantis Shrimp.
- THOMPSON, MARK R., Woodhaven, L. I.:
Large Goldfish.
- TUXEDO CLUB (*through Mr. Edwin C. Kent*), Tuxedo Park, N. Y.:
18 large Steelhead Trout, 14,000 spawn.
- U. S. BUREAU OF FISHERIES (*through Hon. George M. Bowers, Commissioner*):
Pair of Fur-Seal pups; Spawn, Whitefish 1,500,000, White Perch 1,500,000,
Shad 800,000, Atlantic Salmon 5,000, Blackspotted Trout 10,000, Brook
Trout 5,000.
- VOIGTLANDER, AUGUST, Hoboken, N. J.:
Young Alligator.
- WALLACE, MRS. MABEL, Far Rockaway, L. I.:
Young Alligator.
- WALTERS, ROBERT, New York City:
Painted Turtle (8 specimens).
- WOODS, WM. C., New York City:
Young Alligator.
- WURZBURGER, HENRY, Elizabeth, N. J.:
Blue Crab.
- YOUNG, JAMES, New York City:
Young Alligator.
- ZELT, MRS., Brooklyn, N. Y. C.:
Painted Turtle.
- ZLUMER, CARL, New York City:
Hawksbill Turtle.

Gifts to the Library

- BUREAU OF FISHERIES (*through Hon. George M. Bowers, Commissioner*), Washington, D. C.:
Reports and Publications for 1910.
- CARNEGIE INSTITUTION, Washington, D. C.:
Publications for 1910.
- DIMICK, F. F., Boston, Mass.:
35th Annual Report, Boston Fisheries Bureau.
- ILLINOIS STATE LABORATORY OF NATURAL HISTORY (*through Dr. S. A. Forbes, Director*):
Bulletins 8 and 9.
- JENNINGS, G. E., New York City:
The Fishing Gazette-Weekly.
- MAYER, DR. A. G., Dry Tortugas, Fla.:
Medusae of the World (3 vols.), A. G. Mayer.
- NEW JERSEY STATE MUSEUM (*through S. R. Morse, Curator*):
Report, N. J. State Museum—1909.
- NEW YORK FOREST, FISH AND GAME COMMISSION, Albany, N. Y.:
Reports and Publications for 1910.
- SMITHSONIAN INSTITUTION, Washington, D. C.:
Reports and Publications for 1910.
- TOWNSEND, C. H., New York City:
The Apodidae—H. M. Bernard.
- U. S. BUREAU OF EDUCATION, Washington, D. C.:
The Biological Stations of Europe—Kofoid (2 copies).
- WINGATE, HAROLD M., New York City:
Proceedings of the Philadelphia Academy of Natural Sciences.

Purchases

- AMERICAN FISH, GAME & OYSTER Co., New Orleans, La.:
Large Hawksbill Turtle (4 specimens).
- EGGELING, O., New York City:
Siren (3 specimens).
- NOLES, LOUIS, New York City:
Large Bull Frog (4 specimens).
- ROBINS & SONS, New York City:
Lobster, weighing sixteen and a half pounds.

Exchanges

- DETROIT AQUARIUM, Detroit, Mich.:
3 Muscallunge, 8 Redhorse Sucker, 4 Pickerel, 7 Pike-perch, 3 Sheephead, 11 Drumfish, 3 Spotted Catfish, 6 Green Pike, 6 Dogfish.
- HAZARD, R. G., Peacedale, R. I.:
5 Largemouth Black Bass, 2 Pickerel, 4 Catfish, 2 Sucker, Sunfish, 5 Silver Gar, 2 Weakfish, 2 Cunner, 5 Blackfish, 2 Porgie, Kingfish, Mitchell Sculpin, 2 Starry Flounder, Fluke, 2 Sea Robin, 9 Bluefish.

CHARTER
OF THE
NEW YORK ZOOLOGICAL SOCIETY

CHAPTER 435, LAWS OF 1895.

AN ACT to incorporate the New York Zoological Society and to provide for the establishment of a zoological garden in the city of New York.

As amended by Chapter 146 of the Laws of 1902; and by Chapter 240 of the Laws of 1910.

See Chapter 432 of the Laws of 1900.

See Charter of the City of New York, Section 626 of the Laws of 1901.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Charles A. Dana, Oswald Ottendorfer, Andrew H. Green, William H. Webb, Henry H. Cook, Samuel D. Babcock, Charles R. Miller, George G. Haven, J. Hampden Robb, Frederic W. De Voe, J. Seaver Page, Rush C. Hawkins, David James King, Wager Swayne, Charles A. Peabody, Jr., Charles E. Whitehead, Charles R. Flint, Samuel Parsons, Jr., Mornay Williams, Henry E. Gregory, Isaac W. Maclay, Isaac Rosenwald, Hugh N. Camp, Andrew D. Parker, Cornelius Van Cott, William F. Havemeyer, Frederick Shonnard, William W. Thompson, Alexander Hadden, Edward L. Owen, John H. Starin, Rush S. Huidekoper, William W. Goodrich, Albert H. Gallatin, Frederick S. Church, Edward C. Spitzka, Robert L. Niles, Madison Grant, C. Grant La Farge, William Van Valkenburg, and such other persons as may, under the provisions of its by-laws, become members of the corporation hereby created, are hereby created a body corporate and politic, by and under the name of the New York Zoological Society.

SEC. 2. Said corporation shall have power to establish, maintain, and control zoological parks, gardens, or other collections for the promotion of zoology and kindred subjects, and for the instruction and recreation of the people. Said corporation may collect, hold, and expend funds for zoological research and publication, for the protection of wild animal life, and for kindred purposes, and may promote, form, and co-operate with other associations with similar purposes, and may purchase, sell, or exchange animals, plants, and specimens appropriate to the objects for which it was created.

SEC. 3. The managers of said corporation shall have power to make and adopt by-laws for the management and government of its affairs and business, for the admission, suspension, and expulsion of its members, and for the terms and conditions of membership; to prescribe the number and mode of election of its officers; to define their duties; to provide for the safe-keeping of its property, and from time to time to alter and modify its by-laws.

SEC. 4. The affairs and business of said corporation shall be managed and controlled by a board of managers, the number of whom shall be prescribed by the by-laws. The first board of managers shall be divided by lot into three classes, equal in number, one of which classes shall hold office for one year, another for two years, and the other for three years; and all persons elected to be managers at any subsequent election shall hold office for three years, and until others are elected in their stead. There shall be a president, two vice-presidents, treasurer and secretary, to be elected by the board of managers annually, who shall hold office until others are elected in their stead. The first meeting under

this act may be held at any time upon a notice of five days, signed by any five of the incorporators named in the first section of this act, fixing a time and place for such meeting, a copy whereof shall be mailed to each of said incorporators at his usual post-office address, and twelve of such incorporators shall be a quorum for the purpose of organization, adoption of by-laws, and election of officers. No manager of said corporation shall be interested, directly or indirectly, in any contract concerning its property or affairs.

SEC. 5. Said corporation may raise money by the issue of its bonds, secured by a mortgage on any or all of its property not acquired from said city or state.

SEC. 6. Said corporation may take, purchase, and hold real and personal estate necessary for the purpose of its incorporation, and shall possess the general powers and be subject to the restrictions and liabilities prescribed in Article two of Chapter 23 of the Consolidated Laws entitled "General Corporation Law," being Chapter 28 of the Laws of 1909."

SEC. 7. The commissioners of the sinking fund of the said city are authorized in their discretion to allot, set apart, and appropriate for the use of said corporation, any of the lands belonging to said city north of One Hundred and Fifty-fifth street, but not in the Central Park, and such appropriation may be revoked if, after the expiration of five years from the passage of the act, a zoological garden is not established thereon; said grounds thus set apart and appropriated shall be used for no purpose whatsoever except those aforesaid. As soon as any lands are set apart the Mayor of the said city of New York, and the President of the Department of Parks of said city, shall become and be ex-officio members of the board of managers of said corporation. If at any time the animals now composing the menagerie at Central Park shall be removed therefrom by the authorities having charge thereof, said authorities may make an arrangement with the incorporators named in this act or the corporation formed by them for leasing or sale of such animals to such incorporators or corporation, and said incorporators or corporation shall have a preference over any other person or corporation in respect thereto upon the same terms which said authorities could make with any such other person or corporation, or upon such other terms as to such authorities may seem proper, but nothing herein provided shall be construed as giving the commissioners of the Department of Public Parks authority to sell, lease, transfer, or in any other wise dispose of said animals or other property connected with or belonging to said menagerie.

SEC. 8. Admission to the said gardens shall be free to the public for at least four days, one of which shall be Sunday, in each week, subject to such rules and regulations as shall be prescribed by said corporation.

SEC. 9. This act shall take effect immediately.

NEW YORK ZOOLOGICAL SOCIETY

AND THE

NEW YORK AQUARIUM

CHAPTER 441, LAWS OF 1902.

AN ACT to authorize a further appropriation to the New York Zoological Society, for the support of the New York Aquarium.

As amended by Chapter 239 of the Laws of 1910.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Chapter four hundred and forty-one of the laws of nineteen hundred and two, entitled "An act to authorize a further appropriation to the New York Zoological Society for the support of the New York Aquarium," is hereby amended to read as follows:

SECTION 1. The board of estimate and apportionment of the city of New York may annually, in its discretion, include in the budget for the then next ensuing financial year, in addition to any sum or sums which may be appropriated for the adequate support and maintenance of the New York Zoological Park or gardens, situated in the borough of the Bronx, and administered and controlled by the New York Zoological Society, a further sum or sums, in its discretion, for the use of the said New York Zoological Society, provided, however, that the additional appropriation hereby authorized shall be made only in case an agreement is entered into between the said New York Zoological Society and the city of New York, acting by its board of estimate and apportionment for the adequate keeping, maintenance, extension, preservation and exhibition of the building and approaches thereto and collections of aquatic animals and plants contained therein, known as the New York Aquarium, situated in the Battery park in the borough of Manhattan in said city, and also for furnishing opportunities for study, research and publication in connection with said collections, which contract the said board of estimate and apportionment is hereby expressly authorized, in its discretion, to make upon such terms and conditions as may be agreed upon with the said New York Zoological Society, and which contract shall also provide how the duty of the commissioner of parks for the boroughs of Manhattan and Richmond in respect to maintaining the said aquarium now imposed upon him by law shall be performed.

SEC. 2. This act shall take effect immediately.

BY-LAWS
OF THE
NEW YORK ZOOLOGICAL SOCIETY

AMENDED TO JANUARY 21, 1910.

ARTICLE I.

MEETINGS OF THE SOCIETY.

SECTION 1. The office and place of business of the New York Zoological Society shall be in the City of New York, unless otherwise ordered.

SEC. 2. The Society shall hold its annual meeting for the election of Managers, and other business, on the second Tuesday of January, or such day thereafter during the month of January to which said annual meeting shall adjourn.

SEC. 3. Special meetings of the Society shall be called by the Secretary, upon the request of the President or the Chairman of the Executive Committee, or at the written request of ten members.

SEC. 4. Notices of all meetings shall be mailed to each member of the Society at least three days before such meeting.

SEC. 5. At meetings of the Society twenty members shall constitute a quorum.

SEC. 6. The order of business shall be as follows:

1. Roll Call.
2. Reading of minutes not previously read.
3. Report of Executive Committee.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of the Director of the Zoological Park.
7. Report of Director of the Aquarium.
8. Election of Managers.
9. Communications.
10. Miscellaneous business.
11. Reports and resolutions.

ARTICLE II.

BOARD OF MANAGERS.

SEC. 1. The Board of Managers shall consist of thirty-six members, together with the Mayor of New York and President of the Park Board, or Commissioner for the Bronx, who shall be members *ex-officio* of the Board.

SEC. 2. Nineteen Managers shall constitute a quorum, but ten managers may transact current business, and adjourn, subject to the subsequent approval of a meeting at which a quorum shall be present.

SEC. 3. The Board of Managers shall hold an annual meeting on the third Tuesday of January, or on such day thereafter to which said annual meeting shall adjourn. Regular meetings of the Board may also be called by the Secretary on the third Tuesdays of October and April upon the request of the President or Chairman of the Executive Committee. Special meetings of the Board shall be called at any time by the Secretary, upon the request of the President or Chairman of the Executive Committee, or at the written request of five Managers.

SEC. 4. Notices of meetings of the Board shall be mailed to each Manager at least three days before such meetings.

SEC. 5. The successors to the outgoing class of Managers shall be elected by the Society at its annual meeting, but vacancies in the Board may be filled for the unexpired term by the Board of Managers, or by the Executive Committee.

SEC. 6. A Nominating Committee shall be annually appointed by the Executive Committee, and shall consist of three members of the Society at large, who shall nominate and post ten days before the annual election the names of twelve persons to succeed the outgoing class of Managers in a conspicuous place in the office of the Society.

SEC. 7. No person shall be eligible for election to the Board of Managers, except to fill vacancies, unless his name shall have been posted as a candidate by such committee, or by not less than ten members, in writing, in a conspicuous place in the office of the Society ten days before the annual election. All candidates for election as Managers must be Life Members, Patrons, Associate Founders, or Founders of the Society.

SEC. 8. Any Manager who shall fail to attend three consecutive meetings of the Board, unless excused by vote of the Board, shall cease to be a Manager.

SEC. 9. The Board of Managers shall at its annual meeting elect a President, two Vice-Presidents, a Secretary, and a Treasurer, who shall hold office for one year, or until their successors are elected. The President, Vice-Presidents, and Treasurer shall be members of the Board.

SEC. 10. The Director of the Zoological Park, the Director of the Aquarium, and all other persons employed by the Society, shall be appointed by the Board or by the Executive Committee, and shall hold office during the pleasure of the Board.

SEC. 11. The Board shall, at its annual meeting, elect an Executive Committee and Auditing Committee, which shall hold office for one year, or until their successors are elected. The Board of Managers and the Executive Committee shall also have authority to appoint such other Committees or Officers as they may at any time deem desirable, and to delegate to them such powers as may be necessary.

SEC. 12. The order of business of the meetings of the Board shall be as follows:

1. Roll call.
2. Reading of minutes not previously read.
3. Report of Executive Committee.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of Auditing Committee
7. Report of Director of the Zoological Park.
8. Report of Director of the Aquarium.
9. Election of Officers.
10. Election of Committees.
11. Election of new members.
12. Communications.
13. Miscellaneous business.

Sec. 13. All reports and resolutions shall be in writing, and the ayes and nays may be called on any resolution at the request of one Manager.

Sec. 14. Whenever the funds of the Society shall permit, the Board of Managers or the Executive Committee may award medals or other prizes for meritorious work connected with the objects of the Society.

ARTICLE III.

OFFICERS.

Sec. 1. The officers of the Society shall consist of a President, two Vice-Presidents, a Treasurer, a Secretary, and a Director of the Zoological Park. These officers, with the exception of the Director, shall be elected at the annual meeting of the Board of Managers, but any vacancy may be filled for an unexpired term by the Board of Managers, or by the Executive Committee, until the next annual election.

Sec. 2. The President shall preside at all meetings of the Board and of the Society, and shall be *ex-officio* a member of the Executive and Auditing Committees.

Sec. 3. The Vice-Presidents shall, in the absence of the President, perform his duties and possess his powers, acting in the order of their election.

Sec. 4. The Treasurer shall receive, collect and hold, subject to the order of the Board of Managers, or the Executive Committee, all dues, subscriptions, warrants from the City, fees and securities. He shall pay all bills as ordered by the Board of Managers or the Executive Committee, and shall report to the Society at its annual meeting, and to the Board of Managers at all regular meetings, and to the Executive Committee at each meeting. He shall keep all moneys and securities in some bank or trust company to be approved by the Board of Managers or Executive Committee. The books of the Society shall at all times be open to the inspection of the Managers.

Sec. 5. The Secretary shall be a salaried officer of the Society. He shall be present, unless otherwise relieved by the Board or Executive Committee, at all meetings of the Society, of the Board, and of the Standing Committees. He shall keep a careful record of all proceedings, shall have the custody of the seal, archives and books, other than books of account, and shall conduct the correspondence of the Society. He shall issue all notices and tickets, and shall perform such other duties as the Board may direct. He shall be a member *ex-officio* of the Executive, Aquarium, and Auditing Committees, and of the Scientific Council.

Sec. 6. The Director of the Zoological Park shall be elected annually by the Executive Committee at a salary to be determined by said Committee, and paid monthly from funds of the Society. He shall be the responsible administrative officer of the Park, and shall recommend to the Executive Committee candidates for the various positions in the Park. He shall also perform all such other duties in connection with the business, scientific, and literary administration of the Society as may be assigned to him by the Executive Committee.

Sec. 7. The Director of the Aquarium shall be elected annually by the Executive Committee, and shall hold office until removed or his successor is chosen by said Committee. He shall be the responsible administrative officer of the Aquarium, and shall recommend to the Executive Committee all candidates for positions in the Aquarium. The Director of the Aquarium shall be *ex-officio* a member and Chairman of the Aquarium Committee. He shall perform such other duties in connection with the Aquarium as may be assigned to him by the Executive Committee.

ARTICLE IV.

COMMITTEES.

SEC. 1. There shall be two standing committees, the Executive Committee and the Auditing Committee, which shall hold office for one year or until their successors are elected.

SEC. 2. The Executive Committee shall consist of seven Managers, together with the President and Secretary of the Society *ex-officio*. Four members shall constitute a quorum, and all meetings shall be called by the Chairman. The Executive Committee shall fill all vacancies in its own number and shall have the full powers of the Board of Managers, except so far as such delegation of power may be contrary to law.

SEC. 3. The Executive Committee shall have the control and regulation of the collections, library, and all other property of the Society, and shall have power to purchase, sell, and exchange specimens and books, to employ and control all officials and employees of the Society, Park, and Aquarium, and generally to carry out in detail the directions of the Board of Managers and the terms of any contract between the City, or Park Board, and the Society.

SEC. 4. All the rules and regulations for the examination of applicants for the various positions in the Park and Aquarium shall be made or approved by the Executive Committee.

SEC. 5. The Executive Committee may regulate the auditing and payment for all current accounts.

SEC. 6. The Executive Committee shall annually appoint an Aquarium Committee, whose duties and powers are set forth in Section 11 of Article IV of these By-Laws.

SEC. 7. The Executive Committee shall annually appoint a Nominating Committee, whose duties and powers are set forth in Sections 6 and 7, Article II, of these By-Laws.

SEC. 8. It shall also appoint a Scientific Council, whose powers and duties are set forth in Section 2 of Article V of these By-Laws.

SEC. 9. The Committee shall make a written report at each regular meeting of the Board of Managers.

SEC. 10. The Auditing Committee shall consist of three regular members of the Society, in addition to the President and Secretary, members *ex-officio*, and vacancies shall be filled by the Executive Committee. It shall be the duty of the Auditing Committee to audit, annually, the accounts of the Treasurer, of the Director of the Zoological Park, and of the Director of the Aquarium, and any other accounts of the Society, and shall report to the Board of Managers at its annual meeting.

SEC. 11. The Executive Committee shall annually appoint an Aquarium Committee, not to exceed eight members of this Society, who shall hold office until their successors are chosen. All vacancies shall be filled by the Executive Committee. The Director of the Aquarium shall be *ex-officio* a member and the Chairman of the Aquarium Committee, and such Committee may vest in him any or all of its powers. The Chairman of the Executive Committee and the Secretary of the Society shall also be *ex-officio* members of the Aquarium Committee. Three members shall constitute a quorum. The Executive Committee may delegate to the Aquarium Committee such powers as it may deem proper.

ARTICLE V.

SCIENTIFIC COUNCIL.

SEC. 1. The Executive Committee shall annually appoint a Scientific Council of not more than ten members, and shall fill all vacancies. Members of the Council shall hold office until their successors are appointed.

SEC. 2. The duties of the Council shall be to act as an advisory board in all matters pertaining to the scientific administration of the Society, and especially as to the scientific features of the Park, the promotion of zoology by publications and otherwise, and the preservation of the native fauna of America.

SEC. 3. Four members, including the Chairman, shall constitute a quorum. The Chairman shall be elected annually by the Council. The Chairman of the Executive Committee and the Secretary of the Society shall be members *ex-officio* of the council.

ARTICLE VI.

MEMBERS.

SEC. 1. The present members and such others as shall become associated with them, under the conditions prescribed by the By-Laws, shall be members of this Society as long as they shall comply with the By-Laws.

SEC. 2. Members failing to comply with these By-Laws, or for other good and sufficient cause, may be expelled from the Society by the Executive Committee.

SEC. 3. Candidates for membership shall be proposed and seconded by members of the Society. The name, occupation, and place of residence of every member as proposed shall be submitted for election to the Board of Managers or the Executive Committee, and such person, when elected, shall become a member upon payment of the annual dues, or of the fees as prescribed below.

SEC. 4. There shall be a class known as Fellows, which shall consist of members of the Society who have rendered marked services to science, and shall be chosen by the Executive Committee. The privileges and dues of Fellows shall be, in all respects, the same as those of regular members of the Society.

SEC. 5. The annual dues shall be ten dollars, payable in advance, on the first day of May of each year, but the Executive Committee may remit the dues for the current year in the case of members elected between January 1st and May 1st of each year. The classes of membership shall be as follows:

SEC. 6. The payment of \$200 at one time shall constitute any member a Life Member.

A member who has paid annual dues for a period of five years may thereafter, at any time, upon the payment of the difference between the amount of dues already paid and \$200, become a Life Member, but such payment shall be not less than \$100.

SEC. 7. The payment of \$1,000 at one time, or in the case of a Life Member, of \$800, shall constitute any member a Patron.

SEC. 8. The payment of \$2,500 at one time, or in the case of a Patron of \$1,500, or of a Life Member of \$2,300, shall constitute any member an Associate Founder.

SEC. 9. Any member who shall donate to the Society \$5,000, or property of equal value, or any Associate Founder who shall donate \$2,500, or any Patron who shall donate \$4,000, may be elected by the Board of Managers or Executive Committee a Founder.

Sec. 10. Any member who shall have donated to the Society ten thousand dollars (\$10,000), or its equivalent, may be elected by the Board of Managers or the Executive Committee a Founder in Perpetuity. Such Founder in Perpetuity shall have the power to designate by a last will and testament his successor, who shall thereupon be entitled to all the rights and privileges of the original Founder in Perpetuity, including the right of designating in turn his successor.

Sec. 11. Any member who shall have donated to the Society \$25,000, or its equivalent, may be elected by the Board of Managers, or the Executive Committee, a Benefactor. Benefactors shall have the rights and privileges of a Founder in Perpetuity.

Sec. 12. Persons who have rendered marked service in the science of zoology or natural history may be elected Honorary Members, but not more than three such Honorary Members shall be elected in any one calendar year.

Sec. 13. A resident member who shall have rendered marked scientific or professional services to the Society in any branch of its work may be elected by the Executive Committee a Life Member, Patron, Associate Founder, or Founder. A resident of New York who shall have rendered marked service in zoology or natural history may be elected by the Executive Committee a Permanent Fellow.

Sec. 14. Non-residents who communicate valuable information to the Society, or who have rendered marked service in the science of zoology or natural history, may be elected Corresponding Members.

Sec. 15. Benefactors, Founders in Perpetuity, Founders, Associate Founders, Patrons, Life Members, Honorary Members, Permanent Fellows, and Corresponding Members shall be exempt from annual dues.

ARTICLE VII.

PRIVILEGES OF MEMBERS.

Sec. 1. A member's ticket admits the member and his immediate family to the Park on reserve days, and to all lectures and special exhibitions, and may be used by the member's immediate family, and shall be good for the current year.

Sec. 2. Admission tickets to the Park and Aquarium on reserve days are issued to members for distribution, and are good for the current year.

Sec. 3. Each member of the Society is entitled annually to a member's ticket and to ten admission tickets.

Sec. 4. Each member shall also receive one copy of the catalogue or hand-book, the report and official publication of the Society, and shall have all the privileges of the Library and Members' Building.

Sec. 5. No member shall be entitled to the privileges enumerated in this Article unless his annual dues shall have been paid.

Sec. 6. The Life Members shall have all the privileges of members and ten additional admission tickets.

Sec. 7. Benefactors, Founders in Perpetuity, Founders, Associate Founders and Patrons shall have all the privileges of Life Members, and shall in addition receive copies of all scientific works published by the Society.

SEC. 8. Any member who shall fail to pay his annual dues within three months after the same shall have become due, and after notice of thirty days, by mail, shall cease to be a member of the Society; subject, however, to reinstatement by the Board of Managers or Executive Committee for good cause shown.

SEC. 9. Any person elected to membership who shall fail to qualify within three months after notice of his election shall be considered to have declined his election; but such term may be extended by the Board of Managers or Executive Committee.

ARTICLE VIII.

FINANCES.

SEC. 1. The fiscal year of the corporation shall be the calendar year commencing January 1st and ending December 31st.

SEC. 2. Neither the Society nor any of its Managers or Officers shall contract any debt which, with existing debts, shall exceed in amount the funds then in the Treasury, except to meet expenditures for which the City is liable, and for which the Society will be reimbursed by warrants from the Comptroller's office.

ARTICLE IX.

AMENDMENTS.

SEC. 1. Amendments to these By-Laws may be proposed, in writing, at any meeting of the Board of Managers, and adopted by unanimous consent of the Managers present, or if such proposed amendment shall fail to receive unanimous consent, the Secretary shall, with the notices of the next meeting, send a copy of it to each Manager and state that it will be brought up for action at such meeting, when it may be passed by a majority vote.

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